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WILDLIFE REVIEW

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WILDLIFE REVIEW

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Except as indicated, abstracts are by Kenneth J. Chiavetta, editor,
and Paul A. Stewart, former assistant editor.

SOILS

Dittemore, William H., Jr., and others. SOIL SURVEY OF GAINES COUNTY, TEXAS. SCS, Ser. 1961, no. 34. i + 55 p., 11 figs. + single-fold maps based on aerial photos and bound in. June 1965. Sold by Supt. Documents. WR 122: 2

Reiske, Robert F. SOIL LANDSCAPES, AN INDEX TO MULTIPLE USE. J. Forestry 64(4): 230-235, 3 figs. Apr. 1966. WR 122: 2

[U.S. Forest Serv., Upper Darby, Pa.] Abstract: In order to develop good multiple-use plans for any area, it is necessary to know the potential of the land for various uses. This paper presents how soil landscapes may serve as a starting point or as an index to multiple-use planning. Examples are presented at the project or compartmental level and for a ranger district on the Monongahela National Forest, West Virginia.

PLANTS--GENERAL, ECOLOGY, TECHNIQUES

Pomeroy, Kenneth B., and Dorothy Dixon. THESE ARE THE CHAMPS. Am. Forests 72(5): 14-35. May 1966. WR 122: 2

Circumference at 4.5 ft., height, spread and location of record for giants of 385 spp. of trees in the continental United States.

Yarranton, G. A. A PLOTLESS METHOD OF SAMPLING VEGETATION. J. Ecol. 54(1): 229-237, 4 figs. Mar. 1966. WR 122: 2

[Univ. Toronto, Toronto, Canada.] Summary: A sampling method is required to provide data for the quantitative description of variation in vegetation and its relationship to the environment. A method of sampling species contact is described which operates at the scale of the individual. Point samples are taken in which two touching species are recorded; the points can be distributed randomly or in sampling grids, and environmental data may be collected either at points or from grids. The data provided can be used to calculate chi-square interspecific association values and two correlation coefficients, one based on the joint occurrence of a pair of species, and the other on the occurrences of the pair with all other species. These quantities may be employed as the data for more sophisticated analyses. The use of the method is illustrated by reference to saxicolous bryophyte vegetation.

PLANTS--FOREST SURVEYS

Ripley, Thomas H., Lawrence P. Wilhite, Robert L. Downing, and Richard F. Harlow. GAME FOOD PLANTS IN SLASH-LONGLEAF FLATWOODS. Proc. 16th Ann. Conf. SE Assoc. Game & Fish Comms. p. 35-44. 1962 [1965]. WR 122: 2

[SE Forest Expt. Sta., Asheville, N. C.] Summary: A preliminary examination of plant frequency data collected from 500 transects on 100 plots and distributed fairly uniformly throughout the flatwoods of north Florida and south Georgia has provided some interesting observations on principal differences between three understory types (wiregrass, gallberry, and saw-palmetto) for quail, turkey, and deer. Generally, it appeared that flatwoods communities might be most productive for quail and turkeys, but less for deer. Of the subtypes examined for quail, it appeared that wiregrass and palmetto were about equally productive, and the gallberry type apparently was much less productive. A similar situation was seen for turkeys, except that the palmetto type appeared more productive for turkeys than the wiregrass type; and again, gallberry was the least productive. Though all types were apparently marginal for deer, there were significant differences in the three major understories, and the wiregrass and palmetto types appeared to be somewhat more productive.

WILDLIFE--BIOTAS, ECOLOGY, NATURAL HISTORY

Brna, Jan, Miloš Dubajič, and Vinko Munkačevič. OSNOVNI EKOLOŠKI USLOVI BELJA. [BASIC ECOLOGY OF THE CONDITIONS AT BELJE.] Jelen 1: 7-17, 7 figs. 1964. In Serbo-Croatian. WR 122: 3
Geography, hydrology, soil, climate and botany of Belje.

Duffey, Eric A. G. TERRESTRIAL ECOLOGY OF ASCENSION ISLAND. J. Appl. Ecol. 1(2): 219-251, maps. 1964. [From Biol. Abstr. 46(23), 1965.] WR 122: 3
[Monks Wood Expt. Sta., Abbots Ripton, Huntingdonshire, England.]

Lawrence, George E. ECOLOGY OF VERTEBRATE ANIMALS IN RELATION TO CHAPARRAL FIRE IN THE SIERRA NEVADA FOOTHILLS. Ecology 47(2): 278-291, 10 figs. Early Spring 1966. WR 122: 3
[Bakersfield Coll., Bakersfield, Calif.] Chaparral fire brings decided changes in the species composition and density of both plant and animal populations in the Sierra Nevada foothills. Some species decrease whereas others increase following a burn, but no species is totally eliminated, nor is there any apparent diminution of total life on a burn after plant growth resumes. Birds and mammals that normally exhibit a strong preference for chaparral habitat were substantially reduced in numbers in the years following the burn. Conversely, some of the birds that normally prefer grassland or oak woodland increased in number. The fire resulted in an overall increase in densities of nesting birds. None of the small mammals increased in numbers but some of the larger predators, such as the coyote and badger, moved into the burn during the months following the fire.--From abstr.

Sdobnikov, V. M. [COMMUNITY HABITATS IN NORTHERN TAIMYR AND THE DENSITY OF THEIR ANIMAL POPULATION.] Zool. Zhur. 38(2): 243-252. 1959. [From Biol. Abstr. 47(8), 1966, from Referat. Zhur., Biol., 1959, no. 101676. Transl. of Russian abstr.] WR 122: 3

Shcherbina, E. I., Kh. Babaev, Ch. Ataev, and A. I. Kolodenko. [SOME INFORMATION ON THE DISTRIBUTION OF SOME VERTEBRATES IN THE KARABIL MOUNTAINS OF SOUTHEASTERN TURKMENIA.] Izv. Akad. Nauk Turkm. SSR Ser. Biol. Nauk 1: 88-89. 1964. [From Biol. Abstr. 46(19), 1965. In Russian.] WR 122: 3

Stewart, Robert E. NOTES ON BIRDS AND OTHER ANIMALS IN THE SLAVE RIVER-LITTLE BUFFALO RIVER AREA, N.W.T. Blue Jay 24(1): 22-32, 3 figs. Mar. 1966. WR 122: 3
[Jamestown, N. Dak.] Notes on birds, mammals, reptiles, amphibians and butterflies.

WILDLIFE--NATURE PROTECTION & RARE & EXTINCT SPECIES

Marshall, P. M., and J. G. Phillips. PLANS FOR CONSERVING THE WILDLIFE OF HONG KONG. Oryx 8(2): 107-112, 1 fig. Aug. 1965. WR 122: 3
[Univ. Hong Kong, Hong Kong.] With three mammals certainly extinct in the last seventeen years, two probably extinct and several more now on the danger list, there is urgent need for an investigation into the status of Hong Kong's wildlife and the setting aside of reserves for its conservation. Building and industrial development are increasingly destroying some of the hitherto unspoiled areas, and a group of people in Hong Kong have drawn up plans for a national park and several small nature reserves, including an island one on which it would be possible to re-establish local species of animals which could be used to re-stock other areas.

Uspenskii, S. M. [THE NATURAL RESOURCES AND PROTECTION OF THE ANIMAL WORLD IN THE SOVIET ARCTIC REGIONS.] Problemy Severa. Akad. Nauk SSSR (Moscow) 1: 221-228. 1958. [From Biol. Abstr. 47(3), 1966, from Referat. Zhur., Biol., 1959, no. 47215. Transl. of Russian abstr.] WR 122: 3

WILDLIFE--MORPHOLOGY, PHYSIOLOGY, BEHAVIOR, MIGRATION

Barlow, John S. INERTIAL NAVIGATION AND ANIMAL NAVIGATION (BEHAVIOR). New England J. Med. 273(20): 1090-1092. 1965. [From Biol. Abstr. 47(8), 1966.] WR 122: 4
[Mass. Gen. Hosp., Boston.]

WILDLIFE--EFFECTS OF CHEMICALS, WEATHER, CARS, ETC.

Barancheev, L., and I. Fedorov. [EFFECT OF TREATED SEEDS ON PHEASANTS AND PARTRIDGES.] Okhota & Okhotnich'e Khoz. 4: 27. 1964. [From Biol. Abstr. 47 (1), 1966, from Referat. Zhur., Biol., 1964, no. 18I215. Transl. of Russian abstr.] WR 122: 4
On the basis of experiments on chickens and pigeons it is suggested that seeds which are treated with an ethyl-mercuric chloride seed fungicide equivalent to Ceresan are not harmful to the hens.

Ferguson, Denzel E., Jimmie L. Tisdale, Ramon L. Callahan, and Gwen A. Catching. EFFECTS OF COTTON PESTICIDES ON WILDLIFE: A PROGRESS REPORT. Proc. 16th Ann. Conf. SE Assoc. Game & Fish Comms. p. 142-145. 1962 [1965]. WR 122: 4
[Miss. State Univ., State College.] Failure to observe evidence of harmful effects or mortality on an area treated with almost 12 lbs. of insecticide is in sharp contrast to published reports of catastrophic bird kills from single applications of much less insecticide. Such inconsistencies have led us to consider the possibility that some form of resistance may have been developed in bird populations of the treated areas studied here. Bird mortality in cotton growing areas of the Delta now appears markedly reduced compared to that of the mid-1950's. Does all this indicate that insecticides have, through selective mortality, produced bird populations resistant to DDT? A study of this possibility is presently being investigated in both birds and mammals.--From discussion and conclusions.

Feriancova-Masarova, Zora, and Eva Kalivodova. NIEKOLKO POZNAMOK O FAKTOROCH OVPLYVNUJUCICH KVALITATIVNO-KVANTITATIVNY STAV VTAKOV PROSTREDNICTVOM POSOBENIA FLUOROVYCH EXHALATOV V OKOLI HLINIKARNE. [THE INFLUENCE OF FLUORIDE EXHALATES FROM AN ALUMINUM FACTORY UPON THE QUALITATIVE-QUANTITATIVE STATE OF BIRDS.] Bratislava 20(6): 397-403, illus. 1965. [From Biol. Abstr. 47(4), 1965. In Czech with Russian and German summ.] WR 122: 4
[Slovak Acad. Med., Bratislava, Czechoslovakia.] Several factors are of prime importance in influencing the state of the bird population of an area affected by fluoride exhalates from an aluminum foundry: during nesting these are the nutrition and the length of stay in the affected area. Insect-eating birds are more sensitive to the fluoride concentration than grain-eating birds. Birds nesting permanently in the polluted zone show an important decrease in the number of nests. These changes are less apparent in species visiting or hibernating in the polluted area.

Feriancova-Masarova, Zora, Eva Kalivodova, and Eugen Hluchan. VPLYV FLUOROVYCH EXHALATOV V OKOLI HLINIKARNE NA OBSAH FLUORU V KOSTIACH VTAKOV. [THE INFLUENCE OF FLUORIDE EXHALATES IN THE VICINITY OF AN ALUMINUM FOUNDRY ON THE FLUORIDE CONTENT IN THE BONES OF BIRDS.] Bratislava 20(6): 404-410, illus. 1965. [From Biol. Abstr. 47(4), 1966. In Czech with Russian and German summ.] WR 122: 4
[Slovak Acad. Med., Bratislava, Czechoslovakia.] Fluoride content in the bones of sparrows living in the vicinity of an aluminum foundry was found to be much higher than that of a control group. As the poisonous effect of fluoride is detected only after a long exposure, no massive fluorosis has been registered as yet among the sparrow population. It would appear that the life span of the bird would not be long enough for this point to be reached. However, the problem will have to be re-examined in view of the future biotype changes due to the presence of the foundry.

Hill, Edward P., III, and Maurice F. Baker. EFFECTS OF KEPONE PEANUT BUTTER BAIT ON THE BOBWHITE QUAIL AND CERTAIN OTHER BIRDS. Proc. 16th Ann. Conf. SE Assoc. Game & Fish Comms. p. 153-161, 1 fig. 1962 [1965]. WR 122: 5

[Ala. Coop. Wildl. Res. Unit, Auburn.] Summary: In 1960, a field test was made of a bait designed to control the imported fire ant. The bait consisted of 0.125 per cent of kepone in peanut butter applied at the rate of 3.5 grams of kepone in 6 pounds of peanut bait per acre. Heavy mortality of quail occurred following treatment. Tremors and other symptoms of poisoning implicated kepone as the cause of death, but the mode of entry, whether through the bait or through poisoned insects was unclear. Subsequent laboratory tests indicated that quail very likely could not be killed by feeding poisoned insects, but were readily killed by exposure to the bait when it was prepared as it was for the field test.

Murray, Robert W. A SYNECOLOGICAL STUDY OF THE EFFECTS OF THE FIRE ANT ERADICATION PROGRAM IN FLORIDA. Proc. 16th Ann. Conf. SE Assoc. Game & Fish Comms. p. 145-153. 1962 [1965]. WR 122: 5

Sampling techniques were employed in studying bird and mammal populations that would indicate any population change that might occur on any of the three study areas selected. The studies consisted of: (1) a summer small mammal sampling study, (2) a large mammal sampling study, (3) a songbird sampling study, (4) a summer quail and dove breeding population sampling study, and (5) a wintering quail population sampling study. None of the studies showed any significant effect of the treatment upon bird and mammal populations on the treated area. Also no effect of the ants themselves on bird and mammal populations was noted.--From summ. & concl.

Smith, Robert Damon, and Leslie L. Glasgow. EFFECTS OF HEPTACHLOR ON WILDLIFE IN LOUISIANA. Proc. 17th Ann. Conf. SE Assoc. Game & Fish Comms. p. 140-154. 1963 [1965]. WR 122: 5

[Tenn. Game & Fish Comm., Nashville.] Studies of wildlife mortality following the spraying of heptachlor at the rate of 20 pounds of the granular form per acre. On four farms the following totals were found: 53 mammals including 12 spp.; 222 birds including 28 spp.; 22 reptiles including 8 spp.; miscellaneous frogs and many crayfish. Ninety-five percent of the dead animals and birds analyzed contained some level of heptachlor or heptachlor epoxide. Seventy-eight percent of earthworm samples contained epoxide at levels ranging from a trace to 49.0 p.p.m.--From summ.

WILDLIFE--PARASITES & DISEASES

Roth, E. E., W. V. Adams, Kay Newman, G. E. Sanford, Betty Greer, and Kay Lowe. THE EPIDEMIOLOGY OF LEPTOSPIROSIS IN (DOMESTIC ANIMALS, WILDLIFE AND MAN) LOUISIANA. J. La. State Med. Soc. 117(4): 110-115. 1965. [From Biol. Abstr. 46(23), 1965.] WR 122: 5

[Agr. Expt. Sta., Baton Rouge, La.]

WILDLIFE--POPULATIONS & FLUCTUATIONS

Mohr, Carl O., and William A. Stumpf. COMPARISON OF METHODS FOR CALCULATING AREAS OF ANIMAL ACTIVITY. J. Wildl. Mgmt. 30(2): 293-304, 6 figs. Apr. 1966. WR 122: 5

[Univ. Calif., Berkeley.] Abstract: The several concepts and methods for calculating areas of animal activity are compared. These include minimum home range, circular, mean linear, and median-composite, based on points where individual members of a species were seen. The results with these methods are compared with those based on outlines of home range (or territory) as commonly used for birds. Calculating a home range as circular yields area products close to reality for some sociologic groups of animals but not for most. The minimum-range method yields products smaller than those based on the circular-range method. The median-composite method yields a more compact central area,

or core, than do the others but also a progressively wider scattering of isolated points toward the exterior of the composite range. In one case examined (squirrel home ranges), the area which enclosed 75 percent of the points in the core of the median-composite range was about the same as that enclosing 100 percent of the points as commonly used in the minimum home-range method. The shapes of observed home ranges generally change with number of observations and time, but the cores tend to be more stable, and remain more characteristic for different groups, even though also affected by the habitat. Frequency-distribution studies based on the distances of points from the major and minor median axes permit statistical analyses of deviations.

WILDLIFE--TECHNIQUES

Brotzman, Robert L., and Robert H. Giles, Jr. ELECTRONIC DATA PROCESSING OF CAPTURE-RECAPTURE AND RELATED ECOLOGICAL DATA. J. Wildl. Mgmt. 30(2): 286-292. Apr. 1966. WR 122: 6

[Ohio State Univ., Columbus.] Abstract: The disadvantages of ecological and wildlife management data processing and analysis by hand and with desk calculators are discussed along with the advantages of electronic data processing. A standard field form is suggested for capture-recapture observations which will facilitate the transfer of data to permanent punched-card storage. A time-cost comparison of manual and electronic processing of these data is presented which shows savings by electronic methods. Suggestions are made for additional use of electronic data processing in ecological studies. Limitations are discussed.

Chabreck, Robert H., and Clark M. Hoffpauir. THE USE OF WEIRS IN COASTAL MARSH MANAGEMENT IN LOUISIANA. Proc. 16th Ann. Conf. SE Assoc. Game & Fish Comms. p. 103-112. 1962 [1965]. WR 122: 6

[La. Wild Life & Fisheries Comm., Grand Chenier.] The greatest effect through weirs was gained in water level stabilization. The mean difference occurring between water levels affected by weirs and those not affected was 0.44 feet. The greatest difference in water levels at one time was 2.7 feet. Areas not affected by weirs had uncontrolled tidal action, whereas the weirs reduced the flow of water and insured a minimum water level in ponds affected. During the study no difference was found in marsh vegetation behind weirs and in control areas. However, the occurrence of aquatic vegetation was much higher behind weirs in areas not having a drastic salinity fluctuation.--From summ. & concl.

Day, M. G. IDENTIFICATION OF HAIR AND FEATHER REMAINS IN THE GUT AND FAECES OF STOATS AND WEASELS. J. Zool. (Proc. Zool. Soc. London) 148(2): 201-217, 1 fig. + 7 pls. Feb. 1966. WR 122: 6

[Univ. Manitoba, Winnipeg, Canada.] Abstract: Qualitative analysis of the gut and feces contents of stoats and weasels is complicated by the lack of readily identifiable bone fragments, teeth, feathers, etc., of mammalian or avian prey. Often the only evidence of such prey was hair or feather fragments. Since the bulk of food taken by stoats and weasels was from these two food classes, the problem of qualitative analysis resolved itself into that of identifying these hair and feather fragments. By using the scale pattern, cross-section and medulla type, it was possible to construct a key which would identify guard hairs of small mammals of the generic level. Feather identification was based on the structural variations to the down barbules of coverts. Using such criteria a key to the main bird orders was devised.

Murry, Robert E., and Dan Dennett. A PRELIMINARY REPORT ON THE USE OF TRANQUILIZING COMPOUNDS IN HANDLING WILDLIFE. Proc. 17th Ann. Conf. SE Assoc. Game & Fish Comms. p. 134-139. 1963 [1965]. WR 122: 6

[La. Wild Life & Fisheries Comm., Baton Rouge.] Results of tests on gray fox, nutria, gray squirrel, raccoon, white-tailed deer and domestic turkey.

Tarshis, I. Barry. A PROTECTIVE SUIT FOR AQUATIC RESEARCH. J. Wildl. Mgmt. 30(2): 421-422, 1 fig. Apr. 1966. WR 122: 7
[Patuxent Wildl. Res. Center, Laurel, Md.] Abstract: A waterproof anti-exposure suit for protection from adverse weather, as well as water and insect bites, is described.

WILDLIFE--MANAGEMENT & RESEARCH, GENERAL

Alexander, Harold E. CHANGING CONCEPTS AND NEEDS IN WILDLIFE MANAGEMENT. Proc. 16th Ann. Conf. SE Assoc. Game & Fish Comms. p. 161-167. 1962 [1965]. WR 122: 7
[Ark. Game & Fish Comm., Little Rock.]

Anonymous. [USE OF GAME RESOURCES OF THE WHITE SEA AND INLAND WATERS IN KARELIA. NO. I. (KARELIAN BR., ACADEMY OF SCIENCES OF THE USSR).] Akad. Nauk SSSR (Moscow-Leningrad). 302 p., illus. 1963. Price 1 ruble 95 kopecks. [From Biol. Abstr. 46(22), 1965, from Referat. Zhur., Biol., 1965, no. 1D272. In Russian.] WR 122: 7

Croft, Robert L. A SURVEY OF GEORGIA BOW HUNTERS. Proc. 17th Ann. Conf. SE Assoc. Game & Fish Comms. p. 155-163. 1963 [1965]. WR 122: 7
[Ga. Game & Fish Comm., Albany.] Summary: A mailed survey of archery hunters was conducted during the 1962-63 hunting season. Of the delivered questionnaires, 95 per cent were returned. The survey showed that 94 per cent of the licensed bow hunters hunted one or more species. The species most important to archers are deer, rabbits, squirrels and feral hogs. An estimated 578 bow hunters spent 2,839 days to take 141 deer with an average hunting success of 24.5 per cent. Blackbeard Island NWP accounted for 125 of the deer taken. There were 111 deer hit but not recovered by the sportsmen. Nearly all archery hunting for deer occurred during special managed archery seasons. As would be expected, the hunting success increased with the hunting experience.

Engle, James W., Jr. AN ANALYSIS OF THE DEER-BEAR DAMAGE STAMP FUNDS IN VIRGINIA. Proc. 17th Ann. Conf. SE Assoc. Game & Fish Comms. p. 100-107, 2 figs. 1963 [1965]. WR 122: 7
[Va. Comm. Game & Inland Fisheries, Richmond.]

Schrader, Walter H., Jr. DEER AND WILD TURKEY AT A BARGAIN. Proc. 17th Ann. Conf. SE Assoc. Game & Fish Comms. p. 27-31. 1963 [1965]. WR 122: 7
[S. C. Wildl. Resources Dept., Columbia.] "South Carolina Wildlife Resources Department is providing good hunting on Piedmont Management areas with a minimum expenditure of funds, about fifteen cents an acre per year. This low cost is possible for the following reasons: 1. When the sites of the areas are selected, very careful attention is paid to the natural food already available on the proposed areas. 2. Excellent public cooperation is assured by creating a desire, if not already present, for the areas before they are established."

Taylor, W. Hassell. GAME HARVEST AND HUNTER USE / CAMP A. P. HILL, BOWLING GREEN, VIRGINIA. Proc. 17th Ann. Conf. SE Assoc. Game & Fish Comms. p. 168-172. 1963 [1965]. WR 122: 7
[Va. Comm. Game & Inland Fisheries, Culpeper.] Conclusions: In conclusion the following points are stressed: (1) A good deer kill of either sex can be maintained over a long period of time regardless of the doe kill and with a most liberal deer season with few controls on hunting. (2) A military post while operating as a troop training base now sustains high hunting and fishing pressure for the public. (3) Federal-State cooperation of hunting and fishing is for the benefit of the public.

WILDLIFE--HUNTING AREAS & PROBLEMS

Durell, James S. A STUDY OF KENTUCKY HUNTERS WHO HUNTED ONLY IN THEIR HOME COUNTIES. Proc. 16th Ann. Conf. SE Assoc. Game & Fish Comms. p. 171-175. 1962 [1965]. WR 122: 8
[Ky. Dept. Fish & Wildl. Resources, Frankfort.]

Machado, Cirilo E. de Mafra, and Lucia Camareo DeAbreu. NOTAS PRELIMINARES SOBRE A CACA E A PESCA NO ESTADO DE SAO PAULO. III. CACA E CACADORES. I. [PRELIMINARY NOTES ON HUNTING AND FISHING IN THE STATE OF SAO PAULO, BRAZIL. III. HUNTING AND HUNTERS.] Bol. Ind. Anim. 19: 107-117, maps. 1961. [From Biol. Abstr. 47(6), 1966. In Spanish.] WR 122: 8

Malinovskii, A. V. [COMMERCIAL HUNTING IN CZECHOSLOVAKIA.] Goslesbumizdat (Moscow). 99 p., illus., maps. 1963. Price 18 kopecks. [From Biol. Abstr. 46(22), 1965, from Referat. Zhur., Biol., 1964, no. 17I220K. Transl. of Russian abstr.] WR 122: 8

WILDLIFE--FOOD HABITS & TECHNIQUES

Engle, James W., Jr. OBSERVATIONS ON THE GROWTH AND WILDLIFE UTILIZATION OF AUTUMN OLIVE (ELAEAGNUS UMBELLATA) ON THE GEORGE WASHINGTON NATIONAL FOREST, VIRGINIA. Proc. 16th Ann. Conf. SE Assoc. Game & Fish Comms. p. 32-34. 1962 [1965]. WR 122: 8
[Va. Comm. Game & Inland Fisheries, Richmond.]

Feare, C. J. THE WINTER FEEDING OF THE PURPLE SANDPIPER. British Birds 59 (5): 165-179, 7 figs. May 1966. WR 122: 8
[Wellcome Marine Lab., Robin Hood's Bay, Yorkshire, England.] The principal food organisms were small winkles Littorina spp. and first-year dogwhelks Thais lapillus; small mussels Mytilus edulis and crabs Carcinus maenas were important reserve foods.--From summ.

WETLANDS & WILDLIFE

Alexander, Harold E. FISH AND WILDLIFE VS. WATER MANAGEMENT--SOME BASIC CONSIDERATIONS. Proc. 17th Ann. Conf. SE Assoc. Game & Fish Comms. p. 41-47. 1963 [1965]. WR 122: 8
[Ark. Game & Fish Comm., Little Rock.]

Apisov, D. I. [CHANGES IN THE DISTRIBUTION BY STATIONS AND THE POPULATIONS OF GAME ANIMALS BECAUSE OF THE FORMATION OF THE KYIBYSHEV RESERVOIR.] Trudy Vses. Nauch.-Issled. Inst. Zhivotn. Syr'ya Pushniny 20: 98-112. 1963. [From Biol. Abstr. 46(22), 1965, from Referat. Zhur., Biol., 1964, no. 17I227. Transl. of Russian abstr.] WR 122: 8

Gottschalk, John S. WETLANDS, WILDLIFE AND THE ARMY ENGINEERS. Audubon Magazine 68(2): 116-118, illus. Mar.-Apr. 1966. WR 122: 8
[Bur. Sport Fisheries & Wildl., Washington, D.C.]

Keller, Mathew, and Stanley W. Harris. THE GROWTH OF EELGRASS IN RELATION TO TIDAL DEPTH. J. Wildl. Mgmt. 30(2): 280-285. Apr. 1966. WR 122: 8
[Petaluma High School, Petaluma, Calif.] Abstract: The growth of eelgrass (Zostera marina) in relation to tidal depth was studied on three areas of South Humboldt Bay, California, in 1960 and 1962. Six contours of bay bottom between +1.0 and -1.5 feet in relation to mean lower-low tide were sampled. The upper limit of eelgrass growth was at or slightly above +1.0 foot. This contour was exposed to air about 15 percent of the time. The percent of eelgrass coverage, mean turion length, and eelgrass biomass per square foot all increased with increases in tidal depth. The density of turions per square foot and the number of leaves per turion did not vary with depth. The optimum depth for eelgrass production at Humboldt Bay appears to be at about -1.0 foot. Over 90 percent of the total eelgrass biomass and about 60-70 percent of the eelgrass acreage in South Humboldt Bay occur at or below mean lower-low tide.

Shtegman, B. K. [THE BIOLOGICAL CHARACTERISTICS OF WATER RESERVOIRS AS INDICATED BY THEIR BIRD POPULATION.] In: (Papers read at the 6th conference on the problems of the biology of inland waters, 1957.) Akad. Nauk SSSR (Moscow-Leningrad). p. 610-614. 1959. [From Biol. Abstr. 46(19), 1965, from Referat. Zhur., Biol., 1960, no. 81659. Transl. of Russian abstr.] WR 122: 9

FARMLAND & WILDLIFE

Webb, Lloyd G. UTILIZATION OF DOMESTIC FORAGE CROPS BY DEER AND WILD TURKEYS WITH NOTES ON INSECTS INHABITING THE CROPS. Proc. 17th Ann. Conf. SE Assoc. Game & Fish Comms. p. 92-100. 1963 [1965]. WR 122: 9
[Clemson Coll., Clemson, S. C.] Tests to determine the production and utilization of various domestic forage crops by deer and wild turkeys were conducted during 1959-60 and 1960-61. The study also included the sampling of insect populations that inhabited these crops during the summer months when plots were being utilized as a source for insect material by the young turkeys. Results of the study showed the clovers were more productive and were more utilized than were the grasses. The annual grasses were more costly to produce than the perennial grasses. Insect population studies indicated that the two white clovers harbored the most insects during the summer months. This is due in part to the large number of aphids, etc., found on the succulent vegetation. Fescue grass, however, was found to support more grasshoppers during Aug. and Sept.--From summ.

FORESTLAND--FORESTRY & ECOLOGY

Kalinichenko, E. P. [CHANGES IN THE FOREST VEGETATION AND BIRDS OF THE ULUNGI RIVER VALLEY (BIKIN RIVER BASIN) DUE TO FIRES.] Materialy III Nauchnoi Konferentsii Molodykh Spetsialistov. Filial Sibirsk. Otd. Akad. Nauk SSSR (Vladivostok) 2: 43-46. 1963. [From Biol. Abstr. 46(19), 1965, from Referat. Zhur., Biol., 1964, no. 13I184. Transl. of Russian abstr.] WR 122: 9

FORESTLAND--MANAGEMENT FOR & DAMAGE BY WILDLIFE

Bejer-Petersen, B. [CONTROL OF FIELD MICE IN FORESTS.] Dansk Skovfor. Tidsskr. 50(5): 198-211. May 1965. [From Bibliog. Agr. 30(4), 1966. In Danish.] WR 122: 9

Carpenter, Max, and E. V. Richards. CORRELATION OF TIMBER MANAGEMENT AND WILDLIFE MANAGEMENT ON NATIONAL FOREST LAND IN VIRGINIA. Proc. 17th Ann. Conf. SE Assoc. Game & Fish Comms. p. 37-40. 1963 [1965]. WR 122: 9
[Va. Comm. Game & Inland Fisheries, Richmond.]

Dealy, J. Edward. BITTERBRUSH NUTRITION LEVELS UNDER NATURAL AND THINNED PONDEROSA PINE. U. S. Forest Serv. Res. Note PNW-33. 6 p., 1 fig. 1966. WR 122: 9
Analysis of bitterbrush samples taken in mid-Sept. showed significantly higher percent ash and nitrogen free extract and lower percent crude fiber content under the natural stand of pine than under the thinned stands. There appeared to be a consistently higher level of crude fat under the natural stand as compared with the thinned stands, although the differences were not significant. Crude protein content did not vary significantly in this study between the shady, natural pine stand and the more sunny, thinned stands. There were no significant differences in nutrient groups between thinning treatments.

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Harlow, Richard F., and Robert L. Eikum. THE EFFECT OF STAND DENSITY ON THE ACORN PRODUCTION OF TURKEY OAKS. Proc. 17th Ann. Conf. SE Assoc. Game & Fish Comms. p. 126-133. 1963 [1965]. WR 122: 10

[Fla. Game & Fresh Water Fish Comm., DeLand.] "The present study revealed that stand density up to 153 turkey oaks per acre had a minimum influence on acorn production of individual trees and strongly implies that a mature, unthinned stand of 150 oaks per acre may be thinned up to 50 per cent without significantly reducing acorn production, when the best producers are selected."

MAMMALS--GENERAL

Borodin, L. P. [THE RUSSIAN DESMAN (DESMANA MOSCHATA) AND THE MUSKRAT (ONDATRA ZIBETHICA). (ECOLOGICAL RELATIONSHIPS BETWEEN THESE SPECIES AND THEIR ECONOMIC SIGNIFICANCE).] Bull. Moscow Obshch. Ispit. Prirody (Biol.) 70(1): 20-32, illus., map. 1965. [From Biol. Abstr. 47(3), 1966. In Russian.] WR 122: 10

Gentry, John B., Frank B. Golley, and John T. McGinnis. EFFECT OF WEATHER ON CAPTURES OF SMALL MAMMALS. Am. Midland Nat. 75(2): 526-530, 2 figs. Apr. 1966. WR 122: 10

[Savannah River Ecol. Lab., P. O. Box A, Aiken, S.C.] Abstract: The influence of weather and weather change on the captures of small mammals by lines of snap traps in 12 habitats over approximately 12 years on the AEC Savannah River Plant was determined. In addition to the influence of weather, and weather change from the preceding night, the night of trapping, type of trap line, habitat, season, and day of trapping also were considered. The effect of the weather on the numbers of captures was significant for total species and for total captures of the cotton rat. The effect of weather change was not generally significant. However, considering only habitats in which captures of animals were considerably higher than the average, the effect of weather change on captures was usually significant at the 95% level.

Kormilitsyn, A. A., D. S. Nosov, and A. A. Tkachenko. [BIOTECHNICAL MEASURES AND THE CENSUS OF GAME ANIMALS IN THE CRIMEAN STATE PRESERVE AND HUNTING FARM.] In: (The Crimean State Preserve and Hunting Farm.) Krimizdat (Simferopol). p. 213-221. 1963. [From Biol. Abstr. 46(20), 1965, from Referat. Zhur., Biol., 1964, no. 17I224. Transl. of Russian abstr.] WR 122: 10

Lavrov, N. P., editor. [GAME ANIMALS AND HUNTING IN THE NORTHWESTERN PART OF THE RUSSIAN REPUBLIC.] Sbornik Nauch. Statei Zapadn. Otd. Vses. Nauch.-Issled. Inst. Zhivotn. Syr'ya Pushniny (Leningrad) 2: 1-283, illus. 1963. Price 1 ruble 43 kopecks. [From Biol. Abstr. 46(22), 1965, from Referat. Zhur., Biol., 1964, no. 17I221K. In Russian.] WR 122: 10

Manery, J. F., J. S. Barlow, and J. M. Forbes. ELECTROLYTES IN TISSUES, RED CELLS, AND PLASMA OF THE POLAR BEAR AND CARIBOU. Canadian J. Zool. 44(2): 235-240. Mar. 1966. WR 122: 10

[Defence Res. Northern Lab., Fort Churchill, Manitoba, Canada.] Abstract: Sodium, potassium, calcium, magnesium, chloride, and water analyses were carried out on tissues of three polar bears, and on the blood of the barren ground caribou. The electrolyte and water concentrations in heart, liver, skeletal muscle, tendon, and plasma of the polar bear were not essentially different from those found in other mammals. Red blood cells of this branch of the bear family, Ursidae, resembled those of other members of the order, Carnivora, in containing a high sodium, 91.1 meq, and a low potassium concentration, 4.1 meq, per kilogram of packed cells; they also contained 4.9 meq of magnesium per kilogram of packed cells. Caribou red cells had 29.6 meq of sodium per kilogram of packed cells and 1.7 meq of calcium per liter of packed cells, and in this electrolyte pattern resembled other members of the order Artiodactyla, which is distinguished by the variability among the families in the Na-K balance of the erythrocytes. The data reported here are of special interest because of the genetic control of the Na-K balance in red cells.

McCulloch, B., and P. L. Achard. MORTALITY IN THE CAPTURE OF GAME ANIMALS. Oryx 8(2): 131-140, 1 fig. Aug. 1965. WR 122: 11

Summary: The majority of the wild animals captured were chased by vehicle and noosed with a rope. There were no deaths associated with the capture of wildebeest, eland, rhinoceros, buffalo and giraffe. Zebra deaths followed excessive chasing and bad catching technique. It was noted that topi may also be unsuitable subjects for a prolonged chase, and this method proved unsatisfactory also for the more mature ostrich. Deaths occurring later in captivity were mainly due to malnutrition. Losses were highest in wildebeest, topi and zebra, all grassland grazers. There were no losses from this condition in rhinoceros, eland or giraffe, all woodland browsers, nor in buffalo, which are woodland grazers. The bulk transportation of naturally gregarious animals was found to be safe and effective.

Root, Peter G., and Paul G. Pearson. SMALL MAMMALS IN THE EARLY STAGES OF OLD FIELD SUCCESSION ON THE NEW JERSEY PIEDMONT. Bull. N. J. Acad. Sci. 9(1): 21-26, illus. 1964. [From Biol. Abstr. 46(24), 1965.] WR 122: 11

[775 Country Club Rd., Waterbury, Conn.] Live trapping was done in four adjoining cover types in central New Jersey: a mature oak forest, a sorghum field, and fields in the first and third years of abandonment. Peromyscus leucopus was found in the forest and the first year field. Mus musculus occupied the sorghum field during the summer. Microtus pennsylvanicus was found occasionally in the successional fields and Blarina brevicauda was found in all four cover types.

MAMMALS--TECHNIQUES

Fomushkin, V. M. [A NEW TYPE OF BAIT TO REPLACE BREAD IN MAKING CENSUSES OF THE RODENT POPULATION.] Doklady Irkutskogo Protivochumnogo Inst. 6: 85-87. 1963. [From Biol. Abstr. 46(20), 1965, from Referat. Zhur., Biol., 1964, no. 19I223. Transl. of Russian abstr.] WR 122: 11

At temperatures between 7°C and 18° and indoors the number caught was about equal both with elastic polyurethane foam and with bread. In bad weather, the catch with elastic polyurethane foam was 50% higher.

Gallizioli, Steve, and Jerry Day. THE SYRINGE GUN. Wildl. Views 12(5): 9-13. Sept.-Oct. 1965. WR 122: 11

Popular account of the dart-gun and its use in the capture of mule deer and javelina in Ariz.

Golley, Frank B., Richard G. Wiegert, and Robert W. Walter. EXCRETION OF ORALLY ADMINISTERED ZINC-65 BY WILD SMALL MAMMALS. Health Phys. 11(8): 719-722, illus. 1965. [From Biol. Abstr. 47(1), 1966.] WR 122: 11

[Univ. Ga., Athens.]

Korytin, S. A. [THE DEPENDENCE OF THE ACTION OF BARBITURATES ON SOME ECOLOGICAL FACTORS.] Trudy Vses. Nauch.-Issled. Inst. Zhivotn. Syr'ya Pushniny 20: 157-168. 1963. [From Biol. Abstr. 46(20), 1965, from Referat. Zhur., Otd. Vypusk Farmakol. Toksikol. 1964, no. 23. 54. 28. Transl. of Russian abstr.] WR 122: 11

Wild animals are less sensitive to hypnotics than those in captivity. Thus, the optimal dose of barbital for a fox in captivity varies from 125 to 200 mg but under natural conditions about 280-300 mg, and the minimal lethal dose 230 and about 400 mg, respectively. Emphasis is given to the great importance of intense motor activity of wild animals to make them resistant to the action of hypnotics but probably also for greater resistance under natural conditions to various other pathogenic actions.

Maslovets, R. D. [COMPARATIVE EVALUATION OF SOME METHODS OF FAUNISTIC INVESTIGATION OF SMALL MAMMALS UNDER THE CONDITIONS OF THE DESERT ZONE.] Zool. Zhur. 43(10): 1530-1538, illus. 1964. [From Biol. Abstr. 46(20), 1965. In Russian with English summ.] WR 122: 12

[Zool. Inst., Acad. Sci., USSR, Leningrad, USSR.] In comparison with such methods as trapping, direct observations on animals themselves or on the results of their activity (footprints, burrows, food remains, etc.) much better results are obtained by collecting bone remnants from colonies of Rhombomys opimus as well as from fresh and old disintegrated pellets of birds of prey and owls. The efficiency of this method is about twice as high as trapping animals.

Rongstad, Orrin James. CALCIUM-45 LABELING OF MAMMALS FOR USE IN POPULATION STUDIES. Ph.D. thesis, Univ. Wis. 121 p. 1965. [From Dissertation Abstr. 26(9), 1966.] WR 122: 12

Techniques are described for labeling young cottontail rabbits (Sylvilagus floridanus), snowshoe hares (Lepus americanus), and thirteen-lined ground squirrels (Citellus tridecemlineatus) with calcium-45.

Saint-Girons, M. C., and F. Spitz. A PROPOS DE L'ETUDE DES MICROMAMMIFERES PAR L'ANALYSE DES PELOTES DE RAPACES. INTERET ET LIMITES DE LA METHODE. [CONCERNING THE STUDY OF SMALL MAMMALS BY THE ANALYSIS OF PREDATOR PELLETS. ADVANTAGES AND LIMITS OF THE METHOD.] Terre & Vie 1966(1): 3-18, 3 figs. Jan.-Mar. 1966. In French with English summ. WR 122: 12

[Museum d'Histoire Naturelle, Brunoy, France.] Information can be obtained on geographical distribution, habitat preferences, population trends, and population structure of small mammals.

MAMMALS--FAUNAS AND MANUALS

Connor, Paul F. THE MAMMALS OF THE TUG HILL PLATEAU, NEW YORK. NY State Museum & Sci. Serv., Bull. no. 406. [v] + 82 p., 14 figs. May 1966. WR 122: 12

[NY State Museum & Sci. Serv., Albany.] An annotated account of 47 spp. of mammals found in this northern NY area. The water shrew (Sorex palustris albibarbus) "has been treated at greater length than the other small mammals [since] little has been published on the life history of this interesting shrew of the northeastern United States."

Formozov, A. N. ADAPTIVE MODIFICATIONS OF BEHAVIOR IN MAMMALS OF THE EURASIAN STEPPES. J. Mammal. 47(2): 208-223. May 1966. WR 122: 12

[Acad. Sci. USSR, Moscow, USSR.] Abstract: The vast steppe zone of Eurasia is inhabited by about 90 species of mammals, and one-third of them are steppe endemics. Herbivores obtain food from the many species of nutrient-rich grasses and herbs in the diverse steppe vegetational associations. Many small rodents and lagomorphs have elaborate behavioral patterns associated with storage of dry plant parts for winter. Burrowing adaptations are also important in providing cover from predators and suitable microclimate in the steppes, which are much more exposed to direct climatic influences than forest biotopes. Related to burrowing are daily and seasonal patterns of activity, and the abundance of hibernating species in the steppe fauna. Steppe mammals are grouped by life forms, based on trophic relationships, ecological stratum occupied, social behavior, seasonal activity patterns, etc. The behavioral adaptations of four such life forms of steppe mammals are discussed in detail.

Greer, John Keever. THE MAMMALS OF MALLECO PROVINCE, CHILE. Ph.D. thesis, Mich. State Univ. 180 p. 1965. [From Dissertation Abstr. 26(8), 1966.] WR 122: 12

Greer, John Keever. MAMMALS OF MALLECO PROVINCE, CHILE. Mich. State Univ., Publ. Museum, Biol. Ser. 3(2): 49-152, 5 figs., 8 pls. 14 Jan. 1966. WR 122: 13

Publication based on Ph.D. thesis [WR 122: 12]. With sections dealing with methods, biogeographical considerations, characteristics of the mammalian fauna, conservation, checklist of recent mammals and accounts of species. The checklist includes 39 kinds of wild mammals belonging to 36 spp., 28 genera of 14 families of 6 orders living today in Malleco Province, Chile.

Hill, W. H. MAMMALS OF THE HOWARD COLLEGE NATURAL AREA. J. Ala. Acad. Sci. 34(4): 117-121, map. 1963. [From Biol. Abstr. 46(22), 1965.] WR 122: 13

[Howard Coll., Birmingham, Ala.] A total of 12 families, 22 genera and 23 spp. was found. An annotated list of spp. is included.

Kotov, V. A., and L. S. Ryabov. [GAME AND VALUABLE MAMMALS OF THE FOOTHILL AND MOUNTAIN REGIONS OF KRASNODAR KRAI.] Trudy Kavkazskogo Gos. Zapovednika 7: 1-239, illus., maps. 1963. [From Biol. Abstr. 46(22), 1965, from Referat. Zhur., Biol., 1964, no. 17I226K. Transl. of Russian abstr.] WR 122: 13

Detailed characterizations are given of the distribution and supply status of game and valuable mammals, as well as information on biotopes, migrations, population dynamics, reproduction, nutrition, mortality, etc. The most detailed information concerns ungulates, lynxes, martens, European wildcat, otter, wolf, and squirrel.

Schaldach, W. J., Jr. NOTAS BREVES SOBRE ALGUNOS MAMIFEROS DEL SUR DE MÉXICO. [BRIEF NOTES ON SOME MAMMALS OF SOUTHERN MEXICO.] An. Inst. Biol. Univ. Nac. Mex. 35(1/2): 129-137. 1964. [From Biol. Abstr. 47(8), 1966. In Spanish.] WR 122: 13

MAMMALS--PARASITES AND DISEASES

Dyer, William Gerald. LIFE HISTORY AND MORPHOLOGY OF MASTOPHORUS NUMIDICA (SEURAT, 1914) OF THE DEER MOUSE, PEROMYSCUS MANICULATUS IN NORTHERN COLORADO. Ph.D. thesis, Colo. State Univ. 151 p. 1965. [From Dissertation Abstr. 26 (10), 1966.] WR 122: 13

Emanuel, Marie L., I. M. Mackerras, and D. J. W. Smith. THE EPIDEMIOLOGY OF LEPTOSPIROSIS IN NORTH QUEENSLAND. I. GENERAL SURVEY OF ANIMAL HOSTS. J. Hyg. 62(4): 451-484, map. 1964. [From Biol. Abstr. 47(4), 1966.] WR 122: 13

[Leptospirosis Ref. Lab., Brisbane, Queensland, Australia.]

Graber, M., M. Doutre, P. Finelle, J. Keravec, G. Ducroz, and P. Mokotaingar. LES HELMINTHES DE QUELQUES ARTIODACTYLES SAUVAGES APPARTENANT AUX FAMILLES DES BOVIDÉS ET DES SUIDÉS. CES MAMMIFÈRES, EN RÉPUBLIQUE DU TCHAD ET EN R.C.A., SONT-ILS DES RÉSERVOIRS DE PARASITES POUR LES ANIMAUX DOMESTIQUES VIVANT À LEUR CONTACT? [HELMINTHS OF WILD BOVIDAE AND SUIDAE IN TCHAD AND CENTRAL AFRICA: ARE THESE MAMMALS RESERVOIRS OF PARASITES FOR COMMENSAL DOMESTIC ANIMALS?] Rev. Elevage Med. Veterinaire Pays. Trop. 17(3): 377-420, maps. 1964. [From Biol. Abstr. 47(5), 1966. In French with English and Spanish summ.] WR 122: 13

[Lab. Farcha, Fort Lamy, Tchad.]

Keen, Veryl Fay. CUTEREBRA INFECTIONS IN POPULATIONS OF SMALL MAMMALS IN COLORADO. Ph.D. thesis, Univ. Colo. 92 p. 1965. [From Dissertation Abstr. 26(10), 1966.] WR 122: 13

Lankester, Murray W., and Roy C. Anderson. SMALL MAMMALS AS PARATENIC HOSTS OF LUNGWORMS. Canadian J. Zool. 44(2): 341-342. Mar. 1966. WR 122: 13

[Univ. Guelph, Guelph, Ontario, Canada.]

Lapin', I. M. [BIOLOGY OF THE PARASITES OF SMALL FOREST MAMMALS FOUND IN LATVIAN SSR.] Acad. Nauk Latv. SSR (Riga). 135 p., illus. 1963. Price 62 kopecks. [From Biol. Abstr. 47(4), 1966, from Referat. Zhur., Biol., 1964, no. 141223K. Transl. of Russian abstr.] WR 122: 14

McIlwain, P. K., Paul B. Anderson, and F. M. Bolin. SKUNKS PREDOMINATE IN 1965 RABIES TESTS. N. Dak. Farm Res. 24(4): 25, 1 fig. Mar.-Apr. 1966. WR 122: 14

[N. Dak. State Univ., Fargo.] Skunks comprised 67% of the total specimens (76) of 16 spp. and were the only animals found to have negri bodies.

Schneider, Morris D., and Yutaka Furusho. IMMUNOFLUORESCENCE STUDY OF WILD RABIES VIRUS AND ANTIBODY. Canadian J. Comp. Med. & Vet. Sci. 30(5): 129-140, 7 figs. May 1966. WR 122: 14

[IIT Res. Inst., Technol. Center, Chicago, Ill.]

Verts, B. J., and G. L. Storm. A LOCAL STUDY OF PREVALENCE OF RABIES AMONG FOXES AND STRIPED SKUNKS. J. Wildl. Mgmt. 30(2): 419-421. Apr. 1966. WR 122: 14

[Oreg. State Univ., Corvallis.] Abstract: Tissues from 362 striped skunks (Mephitis mephitis), 226 red foxes (Vulpes fulva), and 48 gray foxes (Urocyon cinereoargenteus) were collected in a skunk-rabies area in northwestern Illinois between 1958 and 1964 and were tested for rabies virus by mouse inoculation. During this period, only two striped skunks infected with rabies were reported from Carroll County by the Division of Livestock Industry, Illinois Department of Agriculture, while the prevalence of the disease among annual collections of skunks made there ranged from 0.0 to 27.0 percent. No foxes were found to be infected with rabies before or during the epizootic among striped skunks. These data suggest that the reported incidence of rabies is not a reliable index to the true prevalence of the disease among wildlife populations but seem to provide further evidence for the reported discreteness of skunk-rabies areas and fox-rabies areas.

SHREWS, MOLES, BATS

Baer, George M. A METHOD FOR BLEEDING SMALL BATS. J. Mammal. 47(2): 340. May 1966. WR 122: 14

[Communicable Disease Center, PHS, University Park, N. Mex.] Small bats such as Myotis lucifugus and Pipistrellus subflavus can safely and quite easily be bled from the orbital sinus.

Baker, Robert J., and E. Lendell Cockrum. GEOGRAPHIC AND ECOLOGICAL RANGE OF THE LONG-NOSED BATS, LEPTONYCTERIS. J. Mammal. 47(2): 329-331, 1 fig. May 1966. WR 122: 14

[Univ. Ariz., Tucson.]

Barbour, Roger W., Wayne H. Davis, and Marion D. Hassell. THE NEED OF VISION IN HOMING BY MYOTIS SODALIS. J. Mammal. 47(2): 356-357. May 1966. WR 122: 14

[Univ. Ky., Lexington.]

Buckner, Charles H. POPULATIONS AND ECOLOGICAL RELATIONSHIPS OF SHREWS IN TAMARACK BOGS OF SOUTHEASTERN MANITOBA. J. Mammal. 47(2): 181-194, 5 figs. May 1966. WR 122: 14

[Canada Dept. Forestry, 25 Dafoe Rd., Winnipeg, Manitoba.] Abstract: Shrew populations were measured by recapture techniques at monthly intervals between May and October from 1952 to 1957 on two of three plots in southeastern Manitoba, and from 1952 to 1958 on the third. Annual populations per acre varied from 0.4 to 9.3 for Sorex cinereus, 0 to 4.1 for Sorex arcticus, and 0 to 1.8 for Blarina brevicauda. Populations of S. cinereus varied inversely with those of S. articus where the two species occurred together. The population turnover appeared to be about two generations a year for the two species

of Sorex and one per year for B. brevicauda. An exceptional population peak of S. cinereus is described. The breeding season was from May to August, except in a particularly high population of S. cinereus when breeding extended into October. Breeding began at about 4 months of age or earlier in Sorex and at about 10 months in Blarina. The average number of embryos was 6.5 for all species except at the highest population of S. cinereus when the average for this species dropped to 3.0. Several litters may be produced per season by all these species. Mortality was greatest in the first 2 months after birth, after which it declined gradually. One S. cinereus lived for at least 23 months, and one S. articus 18 months. Population levels of S. arcticus were correlated with the depth of the water table below ground surface--the drier the site, the higher the population. Nesting S. cinereus appeared to be adversely affected by rainfall. The rate of mortality was markedly lower in winter than in summer. Observations failed to implicate parasites or predators as important factors in the population dynamics of shrews. Immigration and emigration may be the chief causes of apparent fluctuations in populations in spring.

Goedbloed, E., L. Cremers-Hoyer, and N. M. Perie. BLOOD PARASITES OF BATS IN THE NETHERLANDS. Ann. Trop. Med. Parasitol. 58(3): 257-260, illus. 1964. [From Biol. Abstr. 47(2), 1966.] WR 122: 15

[Vet. Fac., State Univ., Utrecht, Netherlands.]

Hall, John S., and Nixon Wilson. SEASONAL POPULATIONS AND MOVEMENTS OF THE GRAY BAT IN THE KENTUCKY AREA. Am. Midland Nat. 75(2): 317-324, 2 figs. Apr. 1966. WR 122: 15

[Albright Coll., Reading, Pa.] Abstract: During studies of bat populations of about 100 caves in the Kentucky area, a hibernating colony of about 100,000 gray bats, Myotis grisescens, was found in a cave in Edmonson County, Kentucky. Summer colonies were found in 10 caves in Kentucky, Illinois, and Tennessee. Of 3,072 gray bats banded in the winter colony only 12 were recovered in the summer, with one movement of 102 miles. Of 1,622 banded in six summer colonies in Kentucky and Illinois, 153, or 9.4% were recovered in the hibernating colony in Edmonson County, Kentucky. These various summer colonies from which bats moved to the one hibernating colony are scattered over an area of about 10,500 square miles of Kentucky, southern Illinois, and northern Tennessee.

Humphrey, Stephen R. FLIGHT BEHAVIOR OF MYOTIS LUCIFUGUS AT NURSERY COLONIES. J. Mammal. 47(2): 323. May 1966. WR 122: 15

[Earlham Coll., Richmond, Ind.]

Kuhn, Lee W., William Q. Wick, and Richard J. Pedersen. BREEDING NESTS OF TOWNSEND'S MOLE IN OREGON. J. Mammal. 47(2): 239-249, 4 figs. May 1966. WR 122: 15

[Deschutes Natl. Forest, Bend, Oreg.] Abstract: Nesting habits of moles in Tillamook County, Oregon, were studied from March 1961 to June 1963. Breeding nests of 94 Townsend moles (Scapanus townsendii) and one coast mole (Scapanus orarius) that contained young were located and examined. Breeding nests were usually located in slightly elevated terrain and were indicated by a single large surface mound (30-50 inches in diameter) or a cluster of smaller mounds concentrated in a 6-10-ft area. Nest cavities were spherical, measured about 9 inches in diameter by 6 inches in depth and were 3-20 inches below ground level. Breeding nests had an inner core (25%) of fine dry grasses and an outer shell (75%) of coarse green grasses. Green grasses are added to the outer shell several times during the month the young occupy the nest. Following disturbance female moles frequently abandoned their nests prior to parturition but were more tolerant of nest disturbances after parturition. Trampling by dairy cattle was a common cause of nestling mortalities. Nestling young were classified into three age-groups based on external characters and size. Townsend moles weigh approximately 5 g at birth, develop rapidly and within 30 days are fully furred, weigh 60-80 g and are ready to abandon the natal nest.

Macaberidze, G. V. [FINDING OF AVIAN ACANTHOCEPHALA IN TALPA CAUSASICA.] Cesk. Parasitol. 11: 333-334, illus. 1964. [From Biol. Abstr. 47(6), 1966. In English with Russian summ.] WR 122: 16

Martin, Robert L., John T. Pawluk, and Thomas B. Clancy. OBSERVATIONS ON HIBERNATION OF MYOTIS SUBULATUS. J. Mammal. 47(2): 348-349. May 1966. WR 122: 16
[Univ. Conn., Storrs.]

Orr, Robert T., and Richard C. Banks. BATS FROM ISLANDS IN THE GULF OF CALIFORNIA (LIST, DISTRIBUTION). Proc. Calif. Acad. Sci. 30(10): 207-210. 1964. [From Biol. Abstr. 46(23), 1965.] WR 122: 16
[Calif. Acad. Sci., San Francisco.]

Rosevear, D. R. THE BATS OF WEST AFRICA. British Museum [Nat. Hist.] (London, England). xvii + 418 p., illus., map. 1965. Price 7 pounds 15 shillings. [From Biol. Abstr. 47(4), 1966.] WR 122: 16

Rusakov, O. S. [THE DIET, FOOD SUPPLY, POPULATION DENSITY, AND STATIONS OF THE EUROPEAN MOLE (TALPA EUROPAEA EUROPAEA) AS RELATED TO AN EVALUATION OF ITS ECONOMIC IMPORTANCE.] Sbornik Nauch. Statei Zapadn. Otd. Vses. Nauch.-Issled. Inst. Zhivotn. Syr'ya Pushniny 2: 133-163. 1963. [From Biol. Abstr. 46(22), 1965, from Referat. Zhur., Biol., 1964, no. 16I266. Transl. of Russian abstr.] WR 122: 16

Tamsitt, J. R., and D. Valdivieso. BATS FROM COLOMBIA IN THE SWEDISH MUSEUM OF NATURAL HISTORY, STOCKHOLM. Mammalia 30(1): 97-104. Mar. 1966. WR 122: 16
[Univ. Puerto Rico, San Juan.] Summary: A small collection of 12 species of bats from Colombia in the Swedish Museum of Natural History, Stockholm, is reported. Eight of the species are recorded for the first time from the Dept. of Cauca in western Colombia, and additional records for the following uncommon Colombian bats are given: Vampyressa pusilla thyone, Thyroptera discifera major, Eptesicus fuscus miradorensis and Histiotus montanus colombiae.

Tamsitt, J. R., and Darío Valdivieso. PARTURITION IN THE RED FIG-EATING BAT, STENODERMA RUFUM. J. Mammal. 47(2): 352-353. May 1966. WR 122: 16
[Univ. Puerto Rico, San Juan.]

Vaughan, Terry A. MORPHOLOGY AND FLIGHT CHARACTERISTICS OF MOLOSSID BATS. J. Mammal. 47(2): 249-260, 4 figs. May 1966. WR 122: 16
[Colo. State Univ., Fort Collins.] Abstract: Selected aspects of the morphology of bats of the family Molossidae are described and the functional significance of these features are discussed. The structure and proportions of the ears and the wings are considered to reflect primarily the rapid enduring flight typical of molossids. Comparisons of some characteristics of the wings of three molossids and of four bats of the family Vespertilionidae were made, and several aerodynamic relationships were applied to a consideration of the styles and speeds of flight of these bats. Molossid bats in general seem adapted to fast flight in open areas, whereas the vespertilionids studied are apparently suited to slower flight fairly low to the ground, near vegetation and other obstacles.

RABBITS & PIKAS

Bacon, Marion, and Roma F. Bacon. NOTES ON THE DISTRIBUTION OF SIPHONAPTERA ON WILD RABBITS OF EASTERN AND CENTRAL WASHINGTON. Northwest Sci. 38(1): 25-32. 1964. [From Biol. Abstr. 46(22), 1965.] WR 122: 16
[Eastern Wash. State Coll., Cheney.]

Currie, Pat O'Carroll. FOOD HABITS OF THE BLACK-TAILED JACKRABBIT (LEPUS CALIFORNICUS) AND FORAGE COMPETITION BETWEEN JACKRABBITS AND DOMESTIC LIVESTOCK ON NATIVE RANGE IN NORTHWESTERN UTAH. Ph.D. thesis, Utah State Univ. 87 p. 1963. [From Dissertation Abstr. 26(10), 1966.] WR 122: 17

Currie, Pat O., and D. L. Goodwin. CONSUMPTION OF FORAGE BY BLACK-TAILED JACKRABBITS ON SALT-DESERT RANGES OF UTAH. J. Wildl. Mgmt. 30(2): 304-311, 1 fig. Apr. 1966. WR 122: 17

[Rocky Mountain Forest & Range Expt. Sta., Fort Collins, Colo.] Abstract: Preference and consumption of forage by the black-tailed jackrabbit (Lepus californicus) and the probable levels of competition between jackrabbits and domestic sheep were studied on salt-desert rangelands from March, 1959, through May, 1960. Grasses, forbs, and shrubs were grazed by rabbits in early spring. Grasses were preferred throughout late spring and summer, and shrubs throughout late fall and winter. Principal shrub species consumed were whitesage (Eurotia lanata), shadscale (Atriplex confertifolia), saltsage (A. nuttallii), and big sagebrush (Artemisia tridentata). Whitesage and saltsage were most readily grazed during the fall and winter. Shadscale and whitesage were preferred early in spring before grass growth began. This preference order closely resembled that for domestic sheep, and during winter when sheep normally graze these ranges, 5.8 jackrabbits consumed or wasted an amount of forage equaling the food requirement of 1 sheep for an equivalent period of time.

Evans, Raymond D. BREEDING CHARACTERISTICS OF SOUTHEASTERN MISSOURI COTTONTAILS. Proc. 16th Ann. Conf. SE Assoc. Game & Fish Comms. p. 140-142, 1 fig. 1962 [1965]. WR 122: 17

[Nebr. Game, Forestation & Parks Comm., Sutton.]

Heard, Louie P. NOTES ON COTTONTAIL RABBIT STUDIES IN MISSISSIPPI. Proc. 17th Ann. Conf. SE Assoc. Game & Fish Comms. p. 85-92, 2 figs., 1 pl. 1963 [1965]. WR 122: 17

[Miss. Game & Fish Comm., Jackson.] Life history and habitat improvement on small areas.

Rongstad, Orrin J. BIOLOGY OF PENNED COTTONTAIL RABBITS. J. Wildl. Mgmt. 30(2): 312-319, 2 figs. Apr. 1966. WR 122: 17

[Univ. Minn., Minneapolis.] Abstract: Cottontail rabbits (Sylvilagus floridanus) were raised in 25- x 60-foot game-bird rearing pens during 1961-63 at Poynette, Wisconsin. Conception dates of first litters were less synchronized than those of Missouri cottontails. Nests were constructed from a week before to the day of parturition. Usually a new nest was built for each litter. Maternal care to young seemed to be limited to nursing and covering the nest after feeding. A mean of 2.9 litters per summer with an average of 4.9 young per litter was obtained in the study. Forty-four percent of the young died in their first month. Myiasis by the flesh fly (Wohlfahrtia vigil) was the most serious mortality factor during June and July. Adults had an average monthly mortality rate of 2.8 percent. Summer was the period of highest adult mortality.

Sapozhenkov, Yu. F. [ECOLOGY OF THE HARE LEPUS TOLAI IN THE SANDS OF KARA-KUM.] Zool. Zhur. 43(9): 1382-1387, illus. 1964. [From Biol. Abstr. 46 (20), 1965. In Russian with English summ.] WR 122: 17

[Dept. Zool. Vertebrates, Moscow State Univ., Moscow, USSR.]

Turner, Frederick B., Richard H. Rowland, and Robert A. Wood. NUCLEAR ENGINEERING AND WILDLIFE: RADIOACTIVITY IN JACKRABBITS AFTER THE SEDAN TEST. J. Wildl. Mgmt. 30(2): 433-443, 3 figs. Apr. 1966. WR 122: 17

[Univ. Calif., Los Angeles.] Abstract: After the Sedan thermonuclear test of July, 1962, at the Nevada Test Site, black-tailed jackrabbits (Lepus californicus) were collected from two areas within the local fallout pattern. The maximal tissue burdens measured were 9,700 nc of iodine-131 per gram of thyroid, 3.6 nc of cesium-137 per gram of muscle ash, 25.3 nc of strontium-89 per gram of bone ash, and 0.3 nc of strontium-90 per gram of bone ash. Estimated infinite doses to thyroids from iodine-131 were as high as 4,000 rems.

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The muscle of jackrabbits did not contain enough cesium-137 to render the meat unsafe; a person consuming one of the most highly contaminated rabbits might have incorporated 5 to 10 nc of cesium-137. Possible biological effects of the Sedan test in areas beyond the zone of close-in destruction are considered, and some problems in evaluating the ecological impact of nuclear engineering on wildlife resources are discussed.

RODENTS--MISCELLANEOUS

Abaturov, B. D. [EFFECT OF THE ACTIVITY OF THE STEPPE LEMMING (LAGURUS LAGURUS) ON THE SOIL AND VEGETATION COVERS OF ARID STEPPES IN KAZAKHSTAN.] Bull. Moscow Obshch. Ispit. Prirody (Biol.) 69(6): 24-35, illus. 1964. [From Biol. Abstr. 47(3), 1966. In Russian.] WR 122: 18

Benton, Allen H. WALTZING IN THE RED-BACKED MOUSE. J. Mammal. 47(2): 357. May 1966. WR 122: 18
[State Univ. Coll., Fredonia, N. Y.] "Clethrionomys gapperi."

Bernard, Jean. NOTE PRÉLIMINAIRE SUR LA REPRODUCTION CHEZ LE CAMPAGNOL DES CHAMPS, MICROTUS ARVALIS PALL., DANS LE SUD DE LA BELGIQUE. [PRELIMINARY NOTE ON REPRODUCTION OF THE FIELD MOUSE, MICROTUS ARVALIS PALL., IN SOUTHERN BELGIUM.] Bull. Inst. Agron. Sta. Rech. Gembloux 32(3): 275-289, illus. 1964. [From Biol. Abstr. 47(8), 1966. In French.] WR 122: 18

Bol'shakov, V. N., A. A. Marusov, and A. I. Nikolaeva. [RODENTS, PESTS OF FORESTS.] Les. Khoz. 8: 54-55. Aug. 1965. [From Bibliog. Agr. 30(4), 1966. In Russian.] WR 122: 18
"Includes control."

Davidovich, V. F. [MAMMALS AND THE DYNAMICS OF THE POPULATION OF SOME RODENTS IN THE SARATOV OBLAST.] Zool. Zhur. 43(9): 1366-1372, maps. 1964. [From Biol. Abstr. 46(19), 1965. In Russian with English summ.] WR 122: 18

Diesch, S. L., W. F. McCulloch, and J. L. Braun. ISOLATION OF LEPTOSPIRA GRIPPOTYPHOSA FROM A WESTERN HARVEST MOUSE IN IOWA. Bull. Wildl. Disease Assoc. 2(2): 15-17. Apr. 1966. WR 122: 18
[Univ. Iowa, Iowa City.]

Erhardova, Bozena. HLISTICE Z CELEDI CAPILLARIIDAE U MYSOVITYCH HLODAVCU V CSSR. [NEMATODES OF THE FAMILY CAPILLARIIDAE FROM SMALL RODENT IN CZECHOSLOVAKIA.] Cesk. Parasitol. 11: 141-144, illus. 1964. [From Biol. Abstr. 47(4), 1966. In Czech with English summ.] WR 122: 18
[Parasitol. Ustan, Prague, Czechoslovakia.]

Fedosenko, A. K. [FEATURES OF THE ECOLOGY OF MURINE RODENTS OF HIGH-MOUNTAIN AREAS OF THE ZAILIISKII ALATAU RANGE.] Trudy Inst. Zool. Akad. Nauk Kaz. SSR 23: 75-134. 1964. [From Biol. Abstr. 46(23), 1965, from Referat. Zhur., Biol., 1964, no. 23I260. Transl. of Russian abstr.] WR 122: 18
Detailed data are given on the distribution by stations, nesting places, nutrition, reproduction, activity, ectoparasites, and population sizes of the silver, Tianshan redbacked, and narrow-skulled voles and of the common field-mouse and house mouse.

Ferianc, Oskar. ROZSIRENIE RYSAVKY TMAVOPASEJ (APODEMUS AGRARIUS) NA HORNOM POVAZI A CESTY JEJ PRENIKANIA Z ORAVY DO LIPTOVA. [DISTRIBUTION OF THE FIRE MOUSE (APODEMUS AGRARIUS PALL.) IN THE UPPER WAAGTAL AND THE MANNER OF ITS PENETRATION FROM THE REGION OF ORAVA TO LIPTOV.] Biologia (Bratislava) 18(11): 864-867, illus., map. 1963. [From Biol. Abstr. 46(20), 1965. In Czech with Russian and German summ.] WR 122: 18
[Zool. Fak., Univ. Komenskeho, Bratislava, Czechoslovakia.]

Fomushkin, V. M. [NEW TRAPS FOR RODENTS.] Doklady Irkutskogo Protivochumnogo Inst. 5: 227-230. 1963. [From Biol. Abstr. 46(24), 1965, from Referat. Zhur., Biol., 1964, no. 24I282. Transl. of Russian abstr.] WR 122: 19

Getz, Lowell L. SALT TOLERANCES OF SALT MARSH MEADOW VOLES. J. Mammal. 47 (2): 201-207, 3 figs. May 1966. WR 122: 19

[Univ. Conn., Storrs.] Abstract: Tolerance to salt water of a salt marsh population of the meadow vole, Microtus pennsylvanicus, was compared with that of an inland population in Connecticut. Tolerances were determined by survival when maintained on water increased in salinity in steps of 0.05 mole NaCl at 1-, 5-, and 10-day intervals. One group was also placed directly on 0.35 mole NaCl. There was no significant difference between the two groups in their ability to utilize salt water. Neither population could tolerate salinities above 0.30 mole, approximately one-half sea water, for even short periods. Observations indicated there would be times when no free fresh water (in the form of dew, rain, or snow) would be available in the marsh. Measurements of water content and salinity of the common marsh plants indicated the voles could obtain usable water from Spartina patens. The other sedge common in the marsh, Spartina alterniflora, had too high a salinity (approximately 0.35 mole NaCl) to be utilized.

Giege, Bengt. UNDERSÖKNINGAR ÖVER SORKARS SKADEGÖRELSE INOM JORDBRUK, TRÄDGARDSODLING OCH SKOGSBRUK. [RESEARCH ON DAMAGE BY VOLES ON PLANTS OF ECONOMIC IMPORTANCE IN SWEDEN.] Zool. Revy 1: 8-14. 1965. [From Biol. Abstr. 46(23), 1965. In Swedish.] WR 122: 19

[Univ. Stockholm, Stockholm, Sweden.]

Golenishchev, N. N. [EFFECTS OF DARKNESS AND LOW TEMPERATURES ON REPRODUCTION OF THE FIELD VOLE.] Trudy Vses. Inst. Zashchity Rast. 12: 100-103. 1958. [From Biol. Abstr. 47(2), 1966, from Referat. Zhur., Biol., 1960, no. 61219. Transl. of Russian abstr.] WR 122: 19

Hart, Frederick M., and John A. King. DISTRESS VOCALIZATIONS OF YOUNG IN TWO SUBSPECIES OF PEROMYSCUS MANICULATUS. J. Mammal. 47(2): 287-293, 3 figs. May 1966. WR 122: 19

[Univ. Oreg. Med. School, Portland.] Abstract: Vocalizations of young Peromyscus maniculatus bairdii and P. m. gracilis in an acute cold stress situation were studied by tape recording and spectrographic analysis. Vocalizations consisted of regularly patterned sequences of sounds; typically a series of two to five short pulses of 0.1 to 0.2 seconds' duration was separated by short pauses of 0.07 to 0.15 seconds, and each series of pulses was followed by a longer pause of 0.5 to 5.0 seconds. The series was then repeated. The dominant frequency of the pulses ranged from 3.6 to 26.5 kilocycles and usually showed an initial rise and terminal fall in frequency. Subspecific and age differences were found for several parameters of the vocalizations. The physiological basis and possible behavioral significance of the vocalizations are discussed.

Hock, Raymond J., and Jane C. Roberts. EFFECT OF ALTITUDE ON OXYGEN CONSUMPTION OF DEER MICE: RELATION OF TEMPERATURE AND SEASON. Canadian J. Zool. 44(3): 365-376, 3 figs. May 1966. WR 122: 19

[White Mountain Res. Sta., Univ. Calif., Bishop.] Abstract: Metabolic rates of deer mice, P. maniculatus sonoriensis, native to and studied at sea level, 1220 m, and 3800 m were measured at a number of ambient temperatures between 0 and 37°C. In summer (May-August) there was a direct relationship between metabolic rate and pO_2 at all ambient temperatures. When metabolic rates were measured in fall (October-November) at 20 and 32°C, the MR's of mice from sea level and 3800 m were nearly identical. It is concluded that seasonal changes in MR differ markedly with altitude. At sea level the response to seasonal cold appears ascribable to an increase in physiological insulation. At 3800 m, where summer MR is low, the response to seasonal cold is a metabolic

one, that is, an increase in metabolic rate with no change in body temperature. There appears to be no clear-cut relationship between body temperature and altitude and a number of factors other than hypoxia undoubtedly influence not only body temperature, but also thermoregulatory ability of mice from different altitudes.

Houlihan, R. T. THE RELATIONSHIP OF POPULATION DENSITY TO ENDOCRINE AND METABOLIC CHANGES IN THE CALIFORNIA VOLE MICROTUS CALIFORNICUS. Univ. Calif. Publ. Zool. 65(5): 327-362, illus. 1963. [From Biol. Abstr. 47(1), 1966.] WR 122: 20

Hubbert, W. T., and M. N. Rosen. ISOLATION OF LEPTOSPIRA BALLUM FROM A WESTERN HARVEST MOUSE (REITHRODONTOMYS MEGALOTIS). Bull. Wildl. Disease Assoc. 2(2): 18-19. Apr. 1966. WR 122: 20
[Communicable Disease Center, Public Health Serv., San Francisco, Calif.]

Kasatkin, B. M. [THE GREAT GERBIL (RHOMBOMYS OPIMUS) IN THE USSR.] In: (Zoogeography of the land.) (Tashkent). p. 127-128. 1963. [From Biol. Abstr. 46(19), 1965, from Referat. Zhur., Biol., 1964, no. 14I237. In Russian.] WR 122: 20

Kopein, K. I. [POPULATION ECOLOGY OF THE BIG NARROW-HEADED VOLE AND OB' LEMMING ON YAMAL.] Inst. Biol. Ural'skogo Filiala Akad. Nauk SSSR (Sverdiovsk). 1959. [From Biol. Abstr. 47(4), 1966, from Referat. Zhur., Biol., 1960, no. 61218 D. In Russian.] WR 122: 20

Koshkina, T. V. [THE POPULATION DENSITY AND ITS SIGNIFICANCE IN REGULATING THE NUMBER OF THE NORTHERN REDBACKED VOLE (CLETHRIONOMYS RUTILUS).] Bull. Moscow Obshch. Ispit. Prirody (Biol.) 70(1): 5-19, illus. 1965. [From Biol. Abstr. 47(3), 1966. In Russian.] WR 122: 20

Kraft, V. A. [REPRODUCTION OF WATER VOLES (ARVICOLA TERRESTRIS) AND THE FACTORS REGULATING THEIR POPULATION SIZE IN THE FLOODPLAIN OF THE ISHIM RIVER.] Zool. Zhur. 44(1): 117-122, illus. 1965. [From Biol. Abstr. 47(3), 1966. In Russian with English summ.] WR 122: 20
[Tselinograd Obl. Sanit.-Epidemiol. Sta., Tselinograd, USSR.]

Levine, Norman D. TRYPANOSOMES AND HAEMOBARTONELLA IN WILD RODENTS IN ILLINOIS. J. Protozool. 12(2): 225-228. 1965. [From Biol. Abstr. 46(19), 1965.] WR 122: 20
[Univ. Ill., Urbana.] Trypanosoma microti and Haemobartonella microti were found in 1 (17%) of 6 yellow-bellied voles Microtus ochrogaster, and T. iowensis was found in 7 (11.5%) of 60 thirteen-lined ground squirrels Spermophilus tridecemlineatus in Illinois. Reports of lewisi group trypanosomes from Microtus and Spermophilus are summarized.

Long, Charles A. COMMENTS ON REPRODUCTION IN THE DEER MOUSE OF WYOMING. Trans. Kans. Acad. Sci. 67(1): 149-153, illus. 1964. [From Biol. Abstr. 46 (19), 1965.] WR 122: 20
[Univ. Ill., Urbana.] "Peromyscus maniculatus nebrascensis."

Makarova, L. A., and I. Ya. Polyakov. [CRITERIA FOR PREDICTING THE POPULATION SIZE OF THE SOCIAL VOLE IN AZERBAIDZHAN.] Trudy Vses. Nauch.-Issled. Inst. Zashch. Rast. 18: 200-206. 1963. [From Biol. Abstr. 46(23), 1965, from Referat. Zhur., Biol., 1964, no. 23I273. In Russian with English summ.] WR 122: 20

Ochirov, Yu. D., and A. S. Bondarchuk. [THE RODENTS OF POPULATED PLACES IN THE MOUNTAINOUS AREA BETWEEN THE VITIM AND OLEKMA RIVERS.] Izv. Irkutskogo Nauch.-Issled. Protivochumnogo Inst. Sibiri Dal'nego Vost. 25: 243-247. 1963. [From Biol. Abstr. 46(20), 1965, from Referat. Zhur., Biol., 1964, no. 15I296. Transl. of Russian abstr.] WR 122: 20

Ogneva, N. S. [EPIZOOTIOLOGY OF LISTERELLOSIS IN RODENTS.] Zool. Zhur. 43 (9): 1373-1381, illus. 1964. [From Biol. Abstr. 46(19), 1965. In Russian with English summ.] WR 122: 21
[Cent. Antiplague Observ. Sta., Moscow, USSR.]

Price, Edward O. INFLUENCE OF LIGHT ON REPRODUCTION IN PEROMYSCUS MANICULATUS GRACILIS. J. Mammal. 47(2): 343-344, 1 fig. May 1966. WR 122: 21
[Mich. State Univ., East Lansing.]

Rainey, Dennis G. OBSERVATIONS ON THE DISTRIBUTION AND ECOLOGY OF THE WHITE-THROATED WOOD RAT IN CALIFORNIA. Bull. Southern Calif. Acad. Sci. 64(1): 27-42, illus. 1965. [From Biol. Abstr. 46(23), 1965.] WR 122: 21
[Calif. State Coll., Long Beach.] "Neotoma albigula venusta."

Reid, V. H., R. M. Hansen, and A. L. Ward. COUNTING MOUNDS AND EARTH PLUGS TO CENSUS MOUNTAIN POCKET GOPHERS. J. Wildl. Mgmt. 30(2): 327-334, 3 figs. Apr. 1966. WR 122: 21
[Bur. Sport Fisheries & Wildl., Fort Collins, Colo.] Abstract: There is need for a rapid, reliable method for sampling populations of mountain pocket gophers (Thomomys talpoides) on rangelands. A method for approximating populations by counting new sign (mounds and earth plugs) was devised and tested on high altitude livestock ranges in western Colorado. New sign appearing in a 2-day interval and numbers of mountain pocket gophers were counted on 54 plots, each containing 40,000 square feet, during every fall of a 3-year period. There was a significant positive correlation between the number of mountain pocket gophers, determined by an intensive trapout of each plot, and the number of new signs appearing in the 2-day interval. For season of the year and areas sampled, counts of sign had utility for approximating populations of mountain pocket gophers.

Sealander, J. A. SEASONAL VARIATIONS IN HEMOGLOBIN AND HEMATOCRIT VALUES IN THE NORTHERN RED-BACKED MOUSE, CLETHRIONOMYS RUTILUS DAWSONI (MERRIAM), IN INTERIOR ALASKA. Canadian J. Zool. 44(2): 213-224, 4 figs. Mar. 1966. WR 122: 21
[Univ. Alaska, College.] Abstract: Seasonal variations in hemoglobin and hematocrit values were determined in the northern red-backed mouse, Clethrionomys rutilus dawsoni, from July 1963 through August 1964 in the vicinity of College, Alaska. Hemoglobin concentrations and hematocrits did not show any significant seasonal variation. The relative constancy of the blood values was considered to be a reflection of the rather uniform thermal characteristics of the microenvironment inhabited by the mice. Mean corpuscular hemoglobin concentrations followed a cycle which varied inversely with the ambient macroenvironmental temperature, while net body weights followed a seasonal cycle which was directly correlated with the ambient temperature of the macroenvironment.

Shchepot'ev, N. V., and N. A. Spitsyn. [MAPPING THE DISTRIBUTION AND POPULATION SIZE OF A SPECIES ON THE LIMITS OF ITS RANGE (THE COMMON REDBACKED VOLE (CLETHRIONOMYS GLAREOLUS) IN THE LOWER AREA OF THE VOLGA RIVER).] Zool. Zhur. 44(1): 142-145, map. 1965. [From Biol. Abstr. 47(3), 1966. In Russian with English summ.] WR 122: 21
[Volgograd Obl. Sanit.-Epidemiol. Sta., Volgograd, USSR.]

Shtil'mark, F. R. [THE COMMON RED-BACKED VOLE (CLETHRIONOMYS GLAREOLUS) IN THE FORESTS OF WESTERN SAYAN AND THE SALAIRSK RIDGE.] Uch. Zap. Krasnoyarskogo Gos. Pedagog. Inst. 24(5): 70-75. 1963. [From Biol. Abstr. 46(19), 1965, from Referat. Zhur., Biol., 1964, no. 14I242. Transl. of Russian abstr.] WR 122: 21

Smith, Michael H. BEHAVIORAL DISCRIMINATION SHOWN BY ALLOPATRIC AND SYMPATRIC MALES OF PEROMYSCUS EREMICUS AND PEROMYSCUS CALIFORNICUS BETWEEN FEMALES OF THE SAME TWO SPECIES. Evolution 19(3): 430-435. 1965. [From Biol. Abstr. 47(6), 1966.] WR 122: 21
[Univ. Fla., Gainesville.]

Tucker, Vance A. DIURNAL TORPOR AND ITS RELATION TO FOOD CONSUMPTION AND WEIGHT CHANGES IN THE CALIFORNIA POCKET MOUSE PEROGNATHUS CALIFORNICUS. Ecology 47(2): 245-252, 5 figs. Early Spring 1966. WR 122: 22
[Duke Univ., Durham, N.C.]

Turcek, Frantisek J. O MORTALITE NIEKTORYCH MICROTINAE V ZIMNYCH PODSNEZNYCH HNIEZDACH. [MORTALITY OF SOME MICROTINAE IN WINTER NESTS UNDER SNOW.] Biologica (Bratislava) 20(2): 127-132, illus. 1965. [From Biol. Abstr. 47(7), 1966. In Czech with Russian and German summ.] WR 122: 22
[Ustav Biol., Sloven. Akad. Vied, Banska Stiavnica, Czechslovakia.] The total mortality of Microtinae nesting under snow above ground was 5% for Microtus arvalis and Arvicola terrestris. The cause of death of these rodents was traced to predators (weasel, fox), rather than to winter conditions.

Whitney, Rae, and H. O. Burdick. OBSERVATIONS ON (THE REPRODUCTIVE CYCLE OF) RUSSIAN STEPPE LEMMINGS, LAGURUS LAGURUS. J. Reprod. Fertil. 9(3): 379. 1965. [From Biol. Abstr. 46(22), 1965.] WR 122: 22
[Elmira Coll., Elmira, N.Y.] Abstract only.

SCIURIDS

Babenyshev, V. P., and A. B. Sakanyan. [SOME INFORMATION ON THE DISTRIBUTION AND ECOLOGY OF THE EUROPEAN SOUSLIK (CITELLUS CITELLUS) IN ARMENIAN SSR.] Trudy Armyanskoi Protivochumnoi Sta. 2: 327-334. 1963. [From Biol. Abstr. 46(24), 1965, from Referat. Zhur., Biol., 1964, no. 14I228. Transl. of Russian abstr.] WR 122: 22

Berendyaev, S. A., and N. A. Kul'kova. [INTRASPECIES RELATIONSHIPS OF ALTAI MARMOTS (MARMOTA MARMOTA BAIBACINA).] Zool. Zhur. 44(1): 110-116, illus. 1965. [From Biol. Abstr. 47(2), 1966. In Russian with English summ.] WR 122: 22
[Kirgiz Anti-Plague Sta., Frunze, Kirgiz, SSR.]

Bridgwater, Donald D., and Dan F. Penny. PREDATION BY CITELLUS TRIDECEMLINEATUS ON OTHER VERTEBRATES. J. Mammal. 47(2): 345-346. May 1966. WR 122: 22
[Bethany Nazarene Coll., Bethany, Okla.]

Guthrie, Donald R., Henry S. Mosby, and J. Clark Osborne. HEMATOLOGICAL VALUES FOR THE EASTERN GRAY SQUIRREL (SCIURUS CAROLINENSIS). Canadian J. Zool. 44(2): 323-327. Mar. 1966. WR 122: 22
[Univ. British Columbia, Vancouver, Canada.] Abstract: Hemoglobin concentration, hematocrit, erythrocyte diameter, and total and differential leukocyte counts were obtained from five male and seven female gray squirrels. Plasma glucose, corticosterone, and cholesterol concentrations were determined for the five males and for six of the females. The males showed significantly greater values for the hemoglobin and hematocrit. The average leukocyte count was lower than reported values for several other rodent species. Lymphocytes formed a greater percentage of the leukocytes than usually reported for rodent species. No sex-related differences were apparent with respect to the plasma concentration of glucose, corticosterone, and cholesterol. The gray squirrel appears to have a relatively high normal level of corticosterone and cholesterol.

Kidd, J. B., and L. D. Soileau. THE DEVELOPMENT OF AN EFFICIENT SQUIRREL TRAPPING AND MARKING TECHNIQUE IN LOUISIANA. Proc. 16th Ann. Conf. SE Assoc. Game & Fish Comms. p. 113-119, 4 figs. 1962 [1965]. WR 122: 22

Manville, Richard H. ROADSIDE ABUNDANCE OF WOODCHUCKS. Am. Midland Nat. 75 (2): 537-538. Apr. 1966. WR 122: 22
[US F&WS, Washington, D.C.] Abstract: Observations made on auto trips along the Taconic Parkway in New York State suggest a maximum woodchuck population of one per 46 acres along this parkway.

McCarley, Howard. ANNUAL CYCLE, POPULATION DYNAMICS AND ADAPTIVE BEHAVIOR OF CITELLUS TRIDECEMLINEATUS. J. Mammal. 47(2): 294-316, 3 figs. May 1966. WR 122: 23

[Austin Coll., Sherman, Texas.] Abstract: A marked population of Citellus tridecemlineatus, averaging 131 individuals per year, was studied for 3 years on a 113-acre tract in northern Texas. Emergence from hibernation was from 12 March to 5 April. Adults began hibernating in July and juveniles in August and September. Adults averaged 135 days of dormancy and 238 days of aboveground activity. Mating occurred aboveground in April, May and June. Litters were born in May, June and July. Some females older than one year produced two litters per reproductive season. Size of litters emerging from the nest burrow ranged from an average of 4.9 for young females to 7.0 for old females. The sex ratio of juveniles was 1:1. The resident adult population varied from 24 individuals in 1965 to 34 individuals in 1964 with a sex ratio of 1 male: 2.8 females. Mature females tended to survive longer than mature males. Home ranges averaged 11.7 acres for males and 3.5 acres for females. Population size was mostly regulated by dispersal of the juvenile part of the population in late summer and early fall. Additional adjustment of population size and sex ratio through dispersal and mortality occurred in the spring. Colonies of thirteen-lined ground squirrels in northern Texas probably result from attraction to a particular habitat rather than attraction of one squirrel to another. Because the species does tend to occur in colonies, both social and individual behavior have evolved. The adaptive significance of vocal signals, defense and care of young, burrow construction and escape behavior are discussed.

Ol'kova, N. V. [SOME ECOLOGICAL AND PHYSIOLOGICAL FEATURES OF THE LONG-TAILED SIBERIAN SUSLIK.] Izv. Irkutskogo Nauch.-Issled. Protivochumnogo Inst. Sibiri Dal'nego Vost. 25: 205-214. 1963. [From Biol. Abstr. 47(1), 1966, from Referat. Zhur., Biol., 1964, no. 15I328. Transl. of Russian abstr.] WR 122: 23

Quanstrom, Walter Roy. FLOOD TOLERANCE IN RICHARDSON'S GROUND SQUIRREL. J. Mammal. 47(2): 323. May 1966. WR 122: 23

[Univ. Okla., Norman.] "Citellus richardsoni richardsoni."

Sealy, Spencer G. NOTES ON THE CARNIVOROUS TENDENCIES OF SOME SCIURIDS. Blue Jay 24(1): 37-39, 2 figs. Mar. 1966. WR 122: 23

[Battleford, Saskatchewan.] Observations on Tamiasciurus hudsonicus, Citellus richardsonii, Citellus columbianus, supplemented by references from the literature.

Smirnov, P. K. [A STUDY OF THE DAILY ACTIVITY OF THE SPOTTED SOUSLIK (CITELLUS SUSLICUS).] Vestnik Leningr. Univ. Ser. Biol. 3: 146-148, illus. 1964. [From Biol. Abstr. 47(2), 1966. In Russian with English summ.] WR 122: 23

Sokol'skii, S. M. [AN EXPERIMENT IN CATCHING SQUIRRELS WITH HOLLOWED TRAPS IN THE PECHORA-ILYCH PRESERVE.] Zool. Zhur. 43(12): 1877-1878, illus. 1964. [From Biol. Abstr. 47(5), 1966. In Russian with English summ.] WR 122: 23

Tileston, Jules V., and R. R. Lechleitner. SOME COMPARISONS OF THE BLACK-TAILED AND WHITE-TAILED PRAIRIE DOGS IN NORTH-CENTRAL COLORADO. Am. Midland Nat. 75(2): 292-316, 8 figs. Apr. 1966. WR 122: 23

[Bur. Outdoor Recreation, 7860 W. 16th Ave., Denver, Colo.]

Waring, George H. SOUNDS AND COMMUNICATIONS OF THE YELLOW-BELLIED MARMOT (MARMOTA FLAVIVENTRIS). Animal Behaviour 14(1): 177-183, 2 figs. + 2 pls. Jan. 1966. WR 122: 23

[Colo. State Univ., Fort Collins.]

BEAVER

Provorov, N. V. [A REVIEW OF THE RESULTS OF REACCLIMATIZING THE EUROPEAN BEAVER IN THE NORTHWESTERN PART OF THE RUSSIAN REPUBLIC.] Sbornik Nauch. Statei Zapadn. Otd. Vses. Nauch.-Issled. Inst. Zhivotn. Syr'ya Pushniny 2: 99-123, maps. 1963. [From Biol. Abstr. 46(22), 1965, from Referat. Zhur., Biol., 1964, no. 17I240. Transl. of Russian abstr.] WR 122: 24

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MUSKRAT & NUTRIA

Aliev, F. F. ENEMIES AND COMPETITORS OF THE NUTRIA IN USSR. J. Mammal. 47(2): 353-355. May 1966. WR 122: 24
[Azerbaijan Acad. Sci., Baku, Azerbaijan, SSR.]

Al'shtul', M. P. [THE ACCLIMATIZATION, DISTRIBUTION, AND NUMBER OF MUSKRATS IN THE NORTHWESTERN OBLASTS OF THE RUSSIAN REPUBLIC.] Sbornik Nauch. Statei Zap. Otd. Vses. Nauch.-Issled. Inst. Zhivotn. Syr'ya Pushniny 2: 3-41. 1963. [From Biol. Abstr. 46(23), 1965, from Referat. Zhur., Biol., 1964, no. 21I289. Transl. of Russian abstr.] WR 122: 24

Al'shtul', M. P. [THE BIOLOGY OF THE MUSKRAT IN THE NORTHWESTERN PART OF THE RUSSIAN REPUBLIC AND FACTORS DETERMINING THEIR NUMBERS.] Sbornik Nauch. Statei Zapadn. Otd. Vses. Nauch.-Issled. Inst. Zhivotn. Syr'ya Pushniny 2: 42-98. 1963. [From Biol. Abstr. 46(22), 1965, from Referat. Zhur., Biol., 1964, no. 20I287. Transl. of Russian abstr.] WR 122: 24

Donohoe, Robert W. MUSKRAT REPRODUCTION IN AREAS OF CONTROLLED AND UNCONTROLLED WATER-LEVEL UNITS. J. Wildl. Mgmt. 30(2): 320-326. Apr. 1966. WR 122: 24
[Waterloo Wildl. Expt. Sta., New Marshfield, Ohio.] Abstract: Basic aspects of muskrat (Ondatra zibethicus) productivity in the Lake Erie marshes were investigated to determine if differences in reproduction could be detected between animals living in areas of controlled (managed) and uncontrolled (unmanaged) water-level habitats. From the regular trapping seasons of 1954-55 through 1957-58, and in the summer of 1955, 9,091 muskrats were examined. The results suggest that diked units will increase population densities through a reduction of mortality, but these enclosures apparently have little influence on reproductive physiology. Pregnant muskrats were captured from February through August. Corpora lutea were present in ovaries from January through August. Thus the breeding period would be long enough for one female to produce at least three litters if gestation is approximately 30 days. Further data suggest that during the latter part of the breeding cycle (April-August) sexual activity is reduced. The anestrous period apparently extends from September through December.

Korsakov, G. K. [IMPROVING THE FEEDING AND NESTING PROPERTIES OF LAKES AND PONDS FOR MUSKRATS BY FLOATING PLANTS ALONG THE SHORE.] Trudy Vses. Nauch.-Issled. Inst. Zhivotn. Syr'ya Pushniny 20: 113-133. 1963. [From Biol. Abstr. 46(22), 1965, from Referat. Zhur., Biol., 1964, no. 17I237. Transl. of Russian abstr.] WR 122: 24

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[Infest. Contr. Lab., Min. Agr., Fish & Food, Tolworth, England.] Abstract only.

Pavlov, M. P. [THE RESULTS OF EXPERIMENTS ON ACCLIMATIZING COYPU IN THE SEA OF AZOV REGION OF THE KUBAN' FLOODPLAINS AND THE PROSPECTS OF THE COYPU-BREEDING INDUSTRY.] Trudy Vses. Nauchn.-Issled. Inst. Zhivotnogo Syr'ya Pushniny 17: 96-116. 1958. [From Biol. Abstr. 46(24), 1965, from Referat. Zhur., Biol., 1960, no. 56116. Transl. of Russian abstr.] WR 122: 25

Yakushkin, G. D. [THE NUMBERS AND THE HUNTING OF MUSKRAT NORTH OF THE KRANSNOYARSK DISTRICT.] Byul. Nauchn.-Tekh. Inform. Vses. Inst. Zhivotnogo Syr'ya Pushniny 3: 28-33. 1958. [From Biol. Abstr. 47(3), 1966, from Referat. Zhur., Biol., 1959, no. 84591. Transl. of Russian abstr.] WR 122: 25

FUR ANIMALS, GENERAL

Lueth, Francis X. ALABAMA'S PREDATOR STUDIES. Proc. 16th Ann. Conf. SE Assoc. Game & Fish Comms. p. 167-171. 1962 [1965]. WR 122: 25
[Ala. Dept. Conserv., Montgomery.]

Rukovskii, N. N., and N. I. Fomicheva. [ACCLIMATIZATION AND HUNTING OF FUR ANIMALS IN BYELORUSSIA (RESULTS OF THE WORK BY THE BYELORUSSIAN EXPEDITION OF THE ALL-UNION RESEARCH INSTITUTE OF ANIMAL RAW MATERIALS AND FURS).] Byul. Nauchn.-Tech. Inform. Vses. Inst. Zhivotnogo Syr'ya Pushniny 1: 11-16. 1958. [From Biol. Abstr. 47(3), 1966, from Referat. Zhur., Biol., 1959, no. 84588. Transl. of Russian abstr.] WR 122: 25

Tavrovskii, V. A. [WAYS OF INCREASING COMMERCIAL FUR ANIMAL RESOURCES IN YAKUTIYA.] Problemy Severa. Akad. Nauk SSSR (Moscow) 1: 200-210. 1958. [From Biol. Abstr. 47(3), 1966, from Referat. Zhur., Biol., 1959, no. 71926. Transl. of Russian abstr.] WR 122: 25

BEARS

Free, Stuart, and Peggy R. Sauer. HOW OLD IS THAT BEAR? [N.Y.] Conservationist 20(3): 14-15, illus. Dec.-Jan., 1965-1966. WR 122: 25
The growth layer of teeth technique used in aging marine mammals, moose, caribou, beaver and deer is also successful for black bear.

Hock, Raymond J. HEART RATE OF BLACK BEARS IN RELATION TO AGE. J. Mammal. 47(2): 328-329, 1 fig. May 1966. WR 122: 25
[Northrop Space Labs., Hawthorne, Calif.]

Macdonald, W. H. BEARS AND PEOPLE. Land Forest Wildlife 8(4): 16-32. Winter 1965-66. WR 122: 25
Accounts of attacks of bears on humans.

Marks, Stuart A., and Albert W. Erickson. AGE DETERMINATION IN THE BLACK BEAR. J. Wildl. Mgmt. 30(2): 389-410, 8 figs. Apr. 1966. WR 122: 25
[c/o Foreign Area Fellowship Program, 444 Madison Ave., New York, N.Y.]
Abstract: Age criteria are described for separating black bear (Ursus americanus) into six age-classes as follows: cubs, 1-2, 2-4, 4-6, 6-8, and 8+ years. First described from examinations of the skeletal elements of 25 known-age captives, the age-classes were further refined by examining materials from 29 known-age tagged wild bears and from a series of skeletal materials from 140 other bears. Criteria are based on skull morphology, skull and body measurements, canine cementum layers, tooth replacement and wear, epiphyseal

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plate and suture coalescence, and baculum growth and maturation. Of these criteria, canine cementum layers are deemed most accurate for determining age. Comparative skeletal growth studies indicated no significant differences between captive and wild bears.

Stoneberg, Ronald P., and Charles J. Jonkel. AGE DETERMINATION OF BLACK BEARS BY CEMENTUM LAYERS. J. Wildl. Mgmt. 30(2): 411-414, 2 figs. Apr. 1966. WR 122: 26

[Univ. Mont., Missoula.] Abstract: Microscopic examination of decalcified, sectioned, and stained teeth of three wild known-age black bears (Ursus americanus) shows that the layers present in the cementum may be used for age determination. The data also reveal that the primary factor governing seasonal changes in cementum production, which in turn result in the formation of annuli, may not be denning.

MUSTELIDS

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Gorshkov, P. K. [THE IMPORTANCE OF THE BADGER IN THE FOREST BIOCOENOSES OF THE VOLGA-KAMA REGION.] In: (Natural resources of the Volga-Kama region. Animal world.) Nauka (Moscow). p. 46-52, map. 1964. [From Biol. Abstr. 46 (19), 1965, from Referat. Zhur., Biol., 1964, no. 21I245. Transl. of Russian abstr.] WR 122: 26

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[Veterans Admin. Hosp., Augusta, Ga.] The results of this study suggest modifiability of the defensive-aggressive response patterns of the Mephitis mephitis. It also suggests that foot tapping, one of the most characteristic preliminary defensive responses of the skunk, is difficult to extinguish and appears to reinstate itself rapidly following experimental extinction.

Lavov, M. A. [THE INFLUENCE OF SABLES ON THE SQUIRREL POPULATION OF THE TRANSBAIKAL REGION.] Zool. Zhur. 38(2): 261-267. 1959. [From Biol. Abstr. 47 (2), 1966, from Referat. Zhur., Biol., 1960, no. 35374. Transl. of Russian abstr. Original with English summ.] WR 122: 26

Makridin, V. P. [DISTRIBUTION AND BIOLOGY OF THE WOLVERINE (GULO GULO) IN THE FAR NORTH.] Zool. Zhur. 43(11): 1688-1692. 1964. [From Biol. Abstr. 47 (1), 1966. In Russian with English summ.] WR 122: 26

McDaniel, Jimmie C. OTTER POPULATION STUDY. Proc. 17th Ann. Conf. SE Assoc. Game & Fish Comms. p. 163-168. 1963 [1965]. WR 122: 26

[Fla. Game & Fresh Water Fish Comm., Tallahassee.] Based on trappers' reports, the Fla. otter population is increasing.

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Nikolaev, A. M. [THE DIET OF THE KURILE SEA OTTERS AND SOME FEATURES OF THEIR BEHAVIOR IN ICY WEATHER.] In: (Second All-Union Conference for the Study of Marine Mammals, 1963.) Akad. Nauk SSSR (Moscow-Leningrad). p. 32-33. 1963. [From Biol. Abstr. 46(20), 1965, from Referat. Zhur., Biol., 1964, no. 15I312. In Russian.] WR 122: 26

Pedersen, J. A. VILLMINKEN I NORGE. [THE WILD MINK IN NORWAY.] Tidsskr. Norske Landbruk 71(3): 41-51, illus. 1964. [From Biol. Abstr. 47(7), 1966. In Norwegian.] WR 122: 27
[Univ. Oslo, Oslo, Norway.] "Mustela vison."

Popov, V. A. [THE RESULTS OF ACCLIMATIZING THE NORTH AMERICAN MINK MUSTELA VISON IN THE USSR.] In: (Natural resources of the Volga-Kama region. Animal world.] Nauka (Moscow). p. 5-15, map. 1964. [From Biol. Abstr. 46(19), 1965, from Referat. Zhur., Biol., 1964, no. 21I290. Transl. of Russian abstr.] WR 122: 27

Vershinin, A. A. [THE BREEDING DYNAMICS AND EXPLOITATION OF THE STOCKS OF THE KAMCHATKA SABLE.] Trudy Vses. Nauch.-Issled. Inst. Zhivotn. Syr'ya Pushniny 20: 8-33. 1964. [From Biol. Abstr. 46(23), 1965, from Referat. Zhur., Biol., 1964, no. 21I236. Transl. of Russian abstr.] WR 122: 27

Voronov, V. [SEA OTTERS (ENHYDRA LUTRIS) ON THE KURILE ISLANDS.] Okhota & Okhotnich'e Khoz. 1: 10-11. 1964. [From Biol. Abstr. 47(1), 1966, from Referat. Zhur., Biol., 1964, no. 18I277. Transl. of Russian abstr.] WR 122: 27

Webster, W. A. MICROFILARIAE IN ONTARIO SKUNKS: FINAL REPORT. Canadian J. Zool. 44(3): 495, 1 fig. May 1966. WR 122: 27
[Animal Diseases Res. Inst., Canada Dept. Agr., Hull, Quebec.]

DOGS, WOLVES, FOXES

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Makridin, V. P. [THE ARCTIC WOLF AND ITS CONTROL.] Knigoizdat (Krasnoyarsk). 71 p., illus. 1961. Price 9 kopecks. [From Biol. Abstr. 46(22), 1965, from Referat. Zhur., Biol., 1964, no. 18I268K. In Russian.] WR 122: 27

Malczewski, Andrzej. WPŁYW WARUNKÓW BYTOWANIA I RODZAJU KARMY NA HELMINTO-FAUNE LISÓW RUDYCH--VULPES VULPES L. [INFLUENCE OF LIFE CONDITIONS AND DIET ON THE COMPOSITION OF HELMINTH FAUNA OF RED FOXES, VULPES VULPES L.] Wiad. Parazytol. 10(4/5): 572-573. 1964. [From Biol. Abstr. 47(4), 1966. In Polish with English summ.] WR 122: 27
[Polish Acad. Sci., Warsaw, Poland.]

Malczewski, Andrzej. DALSZE BADANIA NAD WPŁYWEM KARMY NA HELMINTOFAUNE U PIESAKÓW--ALOPEX LAGOPUS L. [FURTHER STUDIES ON THE INFLUENCE OF FEEDING ON HELMINTHOFAUNA OF ALOPEX LAGOPUS L.] Wiad. Parazytol. 10(4/5): 574-576. 1964. [From Biol. Abstr. 47(4), 1966. In Polish with English summ.] WR 122: 27
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Mech, L. David. HUNTING BEHAVIOR OF TIMBER WOLVES IN MINNESOTA. J. Mammal. 47(2): 347-348. May 1966. WR 122: 27
[Univ. Minn., Minneapolis.]

Sdobnikov, V. M. [THE ARCTIC FOX IN TAIMYR.] Problemy Severa. Akad. Nauk SSSR (Moscow) 1: 211-220. 1958. [From Biol. Abstr. 47(7), 1966, from Referat. Zhur., Biol., 1959, no. 54073. Transl. of Russian abstr.] WR 122: 27

Smirnov, Yu. V. [THE DISTRIBUTION OF THE WOLF IN KAZAKHSTAN AND THE PROBLEMS INVOLVED IN ITS ELIMINATION.] In: (Zoogeography of the land.) (Tashkent). p. 289-290. 1963. [From Biol. Abstr. 46(22), 1965, from Referat. Zhur., Biol., 1964, no. 18I267. In Russian.] WR 122: 27

CATS

van Zyll de Jong, Constantinus G. FOOD HABITS OF THE LYNX IN ALBERTA AND THE MACKENZIE DISTRICT, N.W.T. Canadian Field-Nat. 80(1): 18-23. Jan.-Mar. 1966. WR 122: 28
[Univ. Toronto, Toronto, Ontario.] Snowshoe hare and microtines ranked highest in the diet. Other mammals found were red squirrel, ground squirrel, beaver and deer. Birds occurred less frequently. Grouse and ducks were most important.--From summ.

Wright, Bruce S. THE COUGAR IN EASTERN CANADA. Canadian Audubon 27(5): 144-148, illus. Nov.-Dec. 1965. WR 122: 28
"A systematic analysis of the more than two hundred reports filed at the Wildlife Station [New Brunswick] showed that by 1960 cougars had been reported from every county in the province."

BIG GAME, GENERAL

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[Colo. State Univ., Fort Collins.]

Almeshan, Kh. A. [FORESTRY AND WILD UNGULATES IN THE RUMANIAN PEOPLE'S REPUBLIC.] Soobshch. Inst. Lesa Akad. Nauk SSSR 13: 118-123. 1959. [From Biol. Abstr. 47(4), 1966, from Referat. Zhur., Biol., 1960, no. 45462. Transl. of Russian abstr.] WR 122: 28

Bannikov, A. G., N. V. Lobanov, and V. D. Treus. [EQUUS PRZEWALSKII AND ITS RE-ESTABLISHMENT IN THE USSR.] Bull. Moscow Obshch. Ispit. Prirody (Biol.) 69(6): 36-46, illus. 1964. [From Biol. Abstr. 47(3), 1966. In Russian.] WR 122: 28

Barrett, R. E., and D. E. Worley. THE INCIDENCE OF DICTYOCAULUS SP. IN THREE POPULATIONS OF ELK IN SOUTH-CENTRAL MONTANA. Bull. Wildl. Disease Assoc. 2(1): 5-6. Jan. 1966. WR 122: 28
[Mont. State Univ., Bozeman.]

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[Univ. Vt., Burlington.]

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Brna, Jan. PRILOG POZNAVANJU BELJSKOG JELENA. [CONTRIBUTION TO THE KNOWLEDGE OF BELJE RED DEER.] Jelen 1: 19-31, [10] figs. 1964. In Serbo-Croatian with Russian and English summ. WR 122: 28
Morphological measurements of a form of Cervus elaphus montanus.

Brock, Stanley E. THE DEER OF BRITISH GUIANA. J. British Guiana Museum & Zoo no. 40. p. 18-31. Jan.-June 1965. WR 122: 28
"Odocoileus gymnotis, Mazama americana tumatumari and Mazama memorivaga."

Bukhmenov, V. P. [SEASONAL MIGRATIONS OF THE ELK IN THE AREA OF THE MOUNTAIN KONZHAKOVSKII KAMEN'.] Trudy Komis Okhrane Prirody Ural'skii Filial Akad. Nauk SSSR (1): 193-198. 1964. [From Biol. Abstr. 47(2), 1966, from Referat. Zhur., Biol., 1964, no. 131308. Transl. of Russian abstr.] WR 122: 28

Buss, Irven O., and Norman S. Smith. OBSERVATIONS ON REPRODUCTION AND BREEDING BEHAVIOR OF THE AFRICAN ELEPHANT. J. Wildl. Mgmt. 30(2): 375-388, 7 figs. Apr. 1966. WR 122: 29

[Wash. State Univ., Pullman.] Abstract: Observations on the breeding behavior of the African elephant (Loxodonta africana) in Uganda show that some wild females begin to breed at approximately 7 years and all females breed by approximately 11 years of age. A declining population and lower annual increment of elephants south of the Victoria Nile River in Murchison Falls National Park are associated with an average postpartum preconception interval more than three times longer than the 24.1-month (sic) period reported in 1953 by Perry. The change in length of this interval is possibly a function of self-regulation in population numbers. At least in some parts of its range, the wild African elephant breeds throughout the year with no distinct seasonal acceleration. Corpora lutea present during early pregnancy are not replaced during a subsequent stage of pregnancy but are maintained throughout gestation and for about 2 months after parturition. Old or degenerate corpora lutea persist for at least 4.5 years postpartum. Apparently in some animals corpora lutea develop before conception, whereas in others, conception apparently occurs when corpora are established. At least two graafian follicles may ovulate and develop into corpora lutea within a short time. Cows have multiple mates, there is no prolonged male-female relationship, and frequently there is no fighting by bulls over females.

Dinesman, L. G. [DAMAGE DONE BY UNGULATES IN FORESTS OF THE USSR.] Soobshch. Inst. Lesa Akad. Nauk SSSR 13: 5-24. 1959. [From Biol. Abstr. 47 (3), 1966, from Referat. Zhur., Biol., 1960, no. 45450. Transl. of Russian abstr.] WR 122: 29

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Eiberle, K. UEBER DEN EINFLUSS DER SONNENSCHEINDAUER AUF DIE GEHOERN-ENTWICKLUNG BEIM REHWILD. [ON THE INFLUENCE OF DAY LENGTH ON (ANTLER) DEVELOPMENT IN ROE DEER.] Schweiz. Z. Forstwesen (J. Forest Suisse) 116(1): 60-64. 1965. [From Biol. Abstr. 47(7), 1966. In German with French summ.] WR 122: 29

Enigk, K., K. Friedhoff, and S. Wirahadiredja. ZUR EMPFANGLICHKEIT VON HAUS- UND WILDWIEDERKÄUERN FÜR THEILERIA OVIS (PIROPLASMIDEA). [THE SUSCEPTIBILITY OF DOMESTIC AND WILD RUMINANTS FOR THEILERIA OVIS (PIROPLASMIDEA).] Z. Parasitenk 24(3): 276-287. 1964. [From Biol. Abstr. 47(4), 1966. In German with English summ.] WR 122: 29

[Inst. Parasitol. Tierarztlichen Hochsch., Hannover, West Germany.]

Enigk, K., K. Friedhoff, and S. Wirahadiredja. ZUR WIRTSSPEZIFITÄT VON BABESIA MOTASI UND BABESIA OVIS (PIROPLASMIDEA). [HOST SPECIFICITY OF BABESIA MOTASI AND BABESIA OVIS (PIROPLASMIDEA).] Z. Parasitenk 24(3): 309-318. 1964. [From Biol. Abstr. 47(4), 1966. In German.] WR 122: 29

[Inst. Parasitol., Tierarztlichen Hochsh., Hannover, West Germany.] "In wild and domestic ungulates."

Fedosov, A. V. [THE INFLUENCE OF ELK ON REFORESTATION IN THE BRYANSK OBLAST.] Soobshch. Inst. Lesa Akad. Nauk SSSR 13: 80-88. 1959. [From Biol. Abstr. 47(5), 1966, from Referat. Zhur., Biol., 1960, no. 45456. Transl. of Russian abstr.] WR 122: 29

Gibson, W. N., and K. MacArthur. ROE DEER AND METHODS OF CONTROL IN THE FORESTS OF SOUTH SCOTLAND. Forestry 38(2): 173-182. 1965. [From Bibliog. Agr. 30(4), 1966.] WR 122: 29

Gilbert, Barrie K., and Jack P. Hailman. UNCERTAINTY OF LEADERSHIP-RANK IN FALLOW DEER. Nature 209(5027): 1041-1042, 1 fig. 5 Mar. 1966. WR 122: 30
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Harthoorn, A. M., and J. Bligh. THE USE OF A NEW ORIPAVINE DERIVATIVE WITH POTENT MORPHINE-LIKE ACTIVITY FOR THE RESTRAINT OF HOOFED WILD ANIMALS. Res. Veterinary Sci. 6(3): 290-299, illus. 1965. [From Biol. Abstr. 46(23), 1965.] WR 122: 30
[Univ. Coll., Nairobi, Kenya.]

Haugen, Arnold O. FETUS RESORPTION IN ELK. J. Mammal. 47(2): 332-334, 2 figs. May 1966. WR 122: 30
[Iowa State Univ., Ames.]

Howe, Duane L., and William G. Hepworth. ANAPLASMOSIS IN BIG GAME ANIMALS: TESTS ON WILD POPULATIONS IN WYOMING. Am. J. Vet. Res. 26(114): 1114-1120. 1965. [From Biol. Abstr. 47(4), 1966.] WR 122: 30
[Wyo. Game & Fish Res. Lab., Laramie.] "Antilocapra a. americana, Odocoileus h. hemionus, Odocoileus virginianus dacotensis and Cervus c. canadensis."

Howe, D. L., G. T. Woods, and G. Marquis. INFECTION OF BIGHORN SHEEP (OVIS CANADENSIS) WITH MYXOVIRUS PARAINFLUENZA-3 AND OTHER RESPIRATORY VIRUSES. RESULTS OF SEROLOGIC TESTS AND CULTURE OF NASAL SWABS AND LUNG TISSUE. Bull. Wildl. Disease Assoc. 2(2): 34-37. Apr. 1966. WR 122: 30
[Wyo. Game & Fish Res. Lab., Laramie.] Abstract: Hemagglutination-inhibition (HI) tests of serum samples from 51 bighorn sheep (Ovis canadensis) and 4 bighorn-domestic hybrid sheep from Wyoming and Montana revealed bovine myxovirus parainfluenza-3 antibody titers of 1:20 or greater in 6 animals. The serums of two bighorns with pneumonia were negative for neutralizing antibodies against IBR virus and the serums of 9 animals failed to show significant titers against 2 strains of human Asian influenza virus. Tissue cultures of nasal swabs and lung tissue were negative for cytopathogenic effects and hemadsorption.

Kaznevskii, P. F. [RELATIONSHIP OF THE FOREST AND THE DEER (CERVUS) IN THE RESERVES OF THE USSR.] Soobshch. Inst. Lesa Akad. Nauk SSSR 13: 25-31. 1959. [From Biol. Abstr. 47(2), 1966, from Referat. Zhur., Biol., 1960, no. 66453. Transl. of Russian abstr.] WR 122: 30

Kerr, Michael A. THE AGE AT SEXUAL MATURITY IN MALE IMPALA. Arnoldia 1 (24): 1-6, 2 figs. 16 Jan. 1965. WR 122: 30
[Dept. Natl. Parks & Wild Life Mgmt., Salisbury, Rhodesia.] Abstract: The relationship between body weight and testis weight in male impala (Apyceros melampus) was highly significant ($P < 0.01$). There was no significant difference between the weight of the left and right testis. A simple smear technique for assessing reproductive condition is described. The results indicate that the yearling ram is physiologically capable of fertilization from approximately 13 months of age. A marked increase in adult testis weight was observed a few months prior to the rutting season.

Knight, Richard R. BONE CHARACTERISTICS ASSOCIATED WITH AGING IN ELK. J. Wildl. Mgmt. 30(2): 369-374, 3 figs. Apr. 1966. WR 122: 30
[Univ. Minn., Saint Paul.] Abstract: A total of 474 radius-ulna specimens of elk (Cervus canadensis) with corresponding mandibles were assigned age-classes according to dentition. The range of several sets of measurements overlapped between calves and older animals. The diameter of the diaphysis separated all calves from all other specimens with the exception of one 2.5-year-old cow. Separation of year classes older than calves is based on presence or absence of epiphyseal cartilage, condition of the vascular groove, development of the medial tuberosity, and the development of ossification. All yearlings were separated from older animals, but 9 percent of 3.5-year-old

animals exhibited 2.5-year-old characteristics and 14 percent of 4.5-year-olds exhibited 3.5-year-old characteristics. Specimens in age-classes older than 3.5 years exhibited a wide range of individual development making further separations difficult.

Kolesnikov, I. M. [THE PENETRATION OF SAIGA INTO THE SULAK-TEREK FLATLANDS.] Zool. Zhur. 38(1): 137-139. 1959. [From Biol. Abstr. 47(2), 1966, from Referat. Zhur., Biol., 1960, no. 35360. Transl. of Russian abstr. Original with English summ.] WR 122: 31

Kotov, V. [ARTIFICIAL SALT LICKS.] Okhota & Okhotnich'e Khoz. 3: 10-11. 1964. [From Biol. Abstr. 46(23), 1965, from Referat. Zhur., Biol., 1964, no. 17I235. Transl. of Russian abstr.] WR 122: 31

In the Caucasian Preserve 7 tons of rock salt a year are deposited at 67 salt licks. Placed 1 per 4000-5000 ha, the salt expenditure in June and July amounts to 500 g per day in the forest and subalpine belts, where the deer population density is 15-20 head per 100 ha, and up to 3000 g per day in the alpine belt, where there are more than 200 turs and chamois per 100 ha. A characteristic area of up to 600 m^2 forms around permanent salt licks.

Kozlovskii, A. A. [THE INFLUENCE OF ELK ON THE RESTORATION OF PINE AND ASPEN IN THE CENTRAL REGIONS OF THE EUROPEAN PART OF THE USSR.] Soobshch. Inst. Lesa Akad. Nauk SSSR 13: 97-101. 1959. [From Biol. Abstr. 47(5), 1966, from Referat. Zhur., Biol., 1960, no. 45459. Transl. of Russian abstr.] WR 122: 31

Kuz'mina, I. E. [SAIGA AND OCHOTONA PUSILLA IN THE UPPER REACHES OF THE PECHORA RIVER.] Zool. Zhur. 44(2): 307-311, illus. 1965. [From Biol. Abstr. 47(4), 1966. In Russian with English summ.] WR 122: 31

[Zool. Inst., Acad. Sci. USSR, Leningrad, USSR.]

Lanina, L. B. [DETERMINING THE PERMISSIBLE ELK POPULATION DENSITY ON HUNTING LANDS OF THE BASIN OF THE UPPER PECHORA RIVER.] Trudy Pechoro-Ilychskogo Gos. Zapovednika 10: 220-275. 1963. [From Biol. Abstr. 46(22), 1965, from Referat. Zhur., Biol., 1964, no. 17I230. Transl. of Russian abstr.] WR 122: 31

Leble, B. B. [CHANGES IN THE UNGULATE POPULATION OF THE ARKHANGEL'SK OBLAST DUE TO FOREST FELLINGS.] Soobshch. Inst. Lesa Akad. Nauk SSSR 13: 74-79. 1959. [From Biol. Abstr. 47(2), 1966, from Referat. Zhur., Biol., 1960, no. 45455. Transl. of Russian abstr.] WR 122: 31

Lovaas, A. L., Joseph L. Egan, and Richard R. Knight. AERIAL COUNTING OF TWO MONTANA ELK HERDS. J. Wildl. Mgmt. 30(2): 364-369, 2 figs. Apr. 1966. WR 122: 31

[Mont. Fish & Game Dept., Great Falls.] Abstract: Repeated aerial counts of elk (Cervus canadensis) were made during three winters in the Gallatin elk range, a narrow mountain canyon, and during one winter in the Sun River elk range, which covers a broad mountain front. Wide discrepancies in the results, within and between years, influenced mainly by snow conditions, were encountered in both areas. It is believed not feasible to apply statistical methods or reliability standards to the count results, and they are considered useful chiefly for following population trends, if evaluated in the light of weather conditions. When sportsmen representatives were included with the counting crews they were made aware of the inherent unreliability of the technique, but the practice required supplementary counts and aircraft, greatly increasing costs.

Lyon, L. Jack. PROBLEMS OF HABITAT MANAGEMENT FOR DEER AND ELK IN THE NORTHERN FORESTS. U.S. Forest Serv. Res. Paper INT-24. 15 p., illus. 1966. WR 122: 32

Abstract: This paper describes problems of habitat management that are characteristic of the northern Rocky Mountain country and proposes research projects that could help solve them.

Matschke, George H. AN EYE LENS-NUTRITION STUDY OF PENNED EUROPEAN WILD HOGS. Proc. 17th Ann. Conf. SE Assoc. Game & Fish Comms. p. 20-27, 3 figs. 1963 [1965]. WR 122: 32

[Tenn. Game & Fish Comm., Madisonville.] Summary: A controlled study was designed to determine the effect of nutrition on eye lens weight. A significant difference occurred between the 18 per cent protein and yellow corn treatments; however, the difference in eye lens weights was really due to the relationship of eye lens weights to body weights and not due to the treatments except as treatments affect body weight and through this medium the eye lens weight. Under controlled conditions dried eye lens weights can be used to age pen-raised European wild hogs. For the European wild hogs, dried eye lens weight is not useful as an indicator of age.

McCullough, Dale R., and Edward R. Schneegas. WINTER OBSERVATIONS ON THE SIERRA NEVADA BIGHORN SHEEP. Calif. Fish & Game 52(2): 68-84, 4 figs. Apr. 1966. WR 122: 32

[Univ. Calif., Berkeley.] Abstract: Sierra bighorn sheep were studied on their winter ranges on the east slope of the Sierras. Ranges are characterized by rugged granite terrain. Reproduction rates were relatively low. Bitterbrush, California buckwheat, green ephedra, and needlegrass were the most important foods. Nutritional content was high except for phosphorus. Sheep harbored moderate infestations of lungworms and lambs also showed infection with Nematodirus. Ranges of deer, elk, and cattle barely overlapped the bighorn ranges and forage competition was absent. Potential population controls are discussed.

McEwan, E. H., and A. J. Wood. GROWTH AND DEVELOPMENT OF THE BARREN GROUND CARIBOU. I. HEART GIRTH, HIND FOOT LENGTH, AND BODY WEIGHT RELATIONSHIPS. Canadian J. Zool. 44(3): 401-411, 7 figs. May 1966. WR 122: 32

[Canadian Wildl. Serv., Vancouver, British Columbia.] Abstract: The changes in body weight and body proportions associated with growth in well-nourished captive barren ground caribou (Rangifer tarandus groenlandicus) are described. Corresponding changes in free ranging wild caribou from the same population are compared with those obtained from the captive specimens. Body weight:hind foot length and body weight:heart girth ratios relative to age are examined as possible parameters for expressing the extent of developmental restriction imposed on the wild caribou by their nutritional environment.

Meteleva, R. I., and I. S. Rubanchik. [RABIES IN DEER OF THE TRANSPOLAR REGION.] Veterinariya 1: 47-48. / 1959. [From Biol. Abstr. 47(2), 1966, from Referat. Zhur., Biol., 1960, no. 26159. In Russian.] WR 122: 32

Mitchell, George Joseph. NATALITY, MORTALITY AND RELATED PHENOMENA IN TWO POPULATIONS OF PRONGHORN ANTELOPE IN ALBERTA, CANADA. Ph.D. thesis, Wash. State Univ. 221 p. 1965. [From Dissertation Abstr. 26(9), 1966.] WR 122: 32

A study of the pronghorn antelope (Antilocapra americana) was conducted in southern Alberta between 1955 and 1964 to determine population natality and mortality in the annually hunted Lake Pakowki population and the non-hunted Lake Newell population. Data collected from these populations and those gathered from the Ronalane area population adjacent to the Lake Newell study area are analysed and compared. Comparisons of kid:female ratios with mean annual adult mortality rates shows that the Ronalane population has the highest mean annual adult mortality rate and also exhibits the highest natality rate. The Lake Pakowki population has a lower mean annual adult mortality rate and exhibits a correspondingly lower natality rate. These comparisons suggest

that antelope natality increases as mean annual adult mortality increases. The relationship between natality rates and turnover rates is not clearly defined in the Lake Newell population where, on the basis of life table data, that population has the highest survivorship and would be expected to show the lowest natality rate inasmuch as the population is relatively stable. The high natality in the unhunted Lake Newell population is additional evidence that some factor or factors are removing antelope from that population. It is believed that emigration and mortality to antelope during their first year of life are the major factors involved.

Morrison, John Albert. POSTPARTUM REPRODUCTIVE ACTIVITY IN FEMALE UGANDA KOB, ADENOTA KOB THOMASI (NEUMANN). Ph.D. thesis, Wash. State Univ. 100 p. 1965. [From Dissertation Abstr. 26(9), 1966.] WR 122: 33

Movinkel, H. PROBLEMER I REINDRIFTEN-SPESIELT I FINMARK. [PROBLEMS IN REINDEER MANAGEMENT IN FINMARK COUNTY, NORWAY.] Tidsskr. Norske Landbruk 71 (1/2): 1-40. 1964. [From Biol. Abstr. 47(7), 1966. In Norwegian.] WR 122: 33
[Finmark Landbruksselskap, Vadsø, Norway.]

Munkačević, Vinko. MORFOLOŠKE OSOBINE ROGOVA BELJSKIH JELENA. [CONTRIBUTION TO THE KNOWLEDGE OF THE MORPHOLOGICAL QUALITIES OF BELJE DEER ANTLERS.] Jelen 1: 33-65, 51 figs. 1964. In Serbo-Croatian with Russian and English summ. WR 122: 33
Morphological, histological and mineral content studies of Cervus elaphus antlers.

Nazarova, I. V. [DATA ON THE SILVICULTURAL VALUE OF EUROPEAN ELK IN THE TATAR AUTONOMOUS SSR.] Soobshch. Inst. Lesa Akad. Nauk SSSR 13: 94-96. 1959. [From Biol. Abstr. 47(2), 1966, from Referat. Zhur., Biol., 1960, no. 45458. Transl. of Russian abstr.] WR 122: 33

Nikiforov, L. P., and L. A. Gibet. [THE INFLUENCE OF ELKS ON THE RESTORATION OF PINES IN KARELIA.] Soobshch. Inst. Lesa Akad. Nauk SSSR 13: 58-62. 1959. [From Biol. Abstr. 46(24), 1965, from Referat. Zhur., Biol., 1960, no. 45452. Transl. of Russian abstr.] WR 122: 33

Otskheli, T. A. [A STUDY OF THE REPRODUCTION OF THE ROE DEER.] Soobshch. Akad. Nauk Gruz. DDR 34(3): 677-682, illus. 1964. [From Biol. Abstr. 46(24), 1965. Original with Russian summ.] WR 122: 33

Parovshchikov, V. Ya. [DISTRIBUTION AND NUMBER OF WILD REINDEER (RANGIFER TARANDUS) IN ARCHANGELSK NORTH.] Zool. Zhur. 44(2): 276-283, maps. 1965. [From Biol. Abstr. 47(8), 1966. In Russian with English summ.] WR 122: 33

Popović, Stojan. MIKROSTRUKTURA I FIZIKO-HEMIJSKA SVOJSTVA MESA JELENA. [MICROSTRUCTURE AND PHYSICO-CHEMICAL PROPERTIES OF RED DEER MEAT.] Jelen 1: 93-101, 2 figs. 1964. In Serbo-Croatian with Russian and English summ. WR 122: 33
"Cervus elaphus."

Savinov, E. F. [MIGRATIONS AND DAILY ACTIVITY OF THE SIBERIAN IBEX IN KAZAKHSTAN.] Trudy Inst. Zool. Akad. Nauk Kaz. SSR 23: 197-207. 1964. [From Biol. Abstr. 47(1), 1966, from Referat. Zhur., Biol., 1964, no. 24I273. Transl. of Russian abstr.] WR 122: 33

Scotter, George W. CHEMICAL COMPOSITION OF FORAGE LICHENS FROM NORTHERN SASKATCHEWAN AS RELATED TO USE BY BARREN-GROUND CARIBOU. Canadian J. Plant Sci. 45(3): 246-250. 1965. [From Biol. Abstr. 46(19), 1965.] WR 122: 33
[Canadian Wildl. Serv., Dept. Northern Affairs and Nat. Resources, Edmonton, Alberta.]

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Sokol, Juraj. AKLIMATIZACIA KAMZIKA HORSKEHO (RUPICAPRA RUPICAPRA L.) VO VELKEJ FATRE. [ACCLIMATIZATION OF RUPICAPRA RUPICAPRA IN VELKA FATRA.] Biologia (Bratislava) 20(6): 440-446, illus., map. 1965. [From Biol. Abstr. 47(3), 1966. In Czech with Russian and German summ.] WR 122: 34
[Vysoky Sk. Lesnicka, Zvolen, Czechoslovakia.]

Sowls, Lyle K. REPRODUCTION IN THE COLLARED PECCARY, TAYASSU TAJACU (DISCUSSION OF THE BREEDING SEASON, BEHAVIOR, NUTRITION AND ECOLOGY). J. Reprod. Fertil. 9(3): 371-372. 1965. [From Biol. Abstr. 46(22), 1965.] WR 122: 34
[Univ. Ariz., Tucson.] Abstract only.

Stevens, David R. RANGE RELATIONSHIPS OF ELK AND LIVESTOCK, CROW CREEK DRAINAGE, MONTANA. J. Wildl. Mgmt. 30(2): 349-363, 5 figs. Apr. 1966. WR 122: 34
[Mont. Fish & Game Dept., Bozeman.] Abstract: A study of range relationships between elk (Cervus canadensis), cattle, and sheep was made in 1963-64 on 100,000 acres of the Crow Creek drainage, Elkhorn Mountains, Montana. Use by elk of the Fescue-Wheatgrass, Douglas fir, and Spruce-Fir zones was determined from 4,939 observations of elk. The Fescue-Wheatgrass zone received almost 100 percent of the elk use from January through March and about 90 percent in April and May. Each zone received considerable use in June and the Spruce-Fir zone received most of the use in July and August. Cattle used all three zones while sheep used only the Spruce-Fir zone. Elk food habits were determined by examining 94 feeding sites and analyzing the contents of eight elk rumens. The spring diet consisted of 77 percent grasses and 23 percent forbs, while the summer diet consisted of 76 percent forbs and only 16 percent grasses. Data from fall rumen samples indicated a progressive shift to grasses during the period. Cattle food habits were determined by examining 69 feeding sites; grasses made up 75 percent and forbs 24 percent of the summer diet. Examination of 28 feeding sites indicated that forbs provided most of the summer diet of sheep. The percentage of forbs in the diet decreased as the intensity of grazing increased. Heavily used areas were considered as areas of possible competition for forage among the grazing animals. In the Spruce-Fir and Douglas fir zones grazed in spring, summer, and fall by elk and in summer and fall by cattle, interspecific competition was not considered significant. In the Fescue-Wheatgrass zone grazed in spring, fall, and winter by elk and summer and fall by cattle, actual competition was not considered serious, but the data indicated a potential for conflict on areas used by elk in winter. A potential for competition in summer was indicated between sheep and elk, but the degree existing on the study area was not considered excessive.

Sweatman, Gordon K. THE SIGNIFICANCE OF THE ARTIFICIAL INTRODUCTION OF REINDEER (RANGIFER TARANDUS) AND MOOSE (ALCES ALCES) IN THE SPREAD OF HYDATID DISEASE (ECHINOCOCCUS GRANULOSUS). Ann. Trop. Med. Parasitol. 58(3): 307-314, map. 1964. [From Biol. Abstr. 47(5), 1966.] WR 122: 34
[Am. Univ. Beirut, Beirut, Lebanon.]

Tanner, Dale. THE BIG WOOD RIVER ELK HERD. Idaho Wildl. Rev. 18(3): 3-6, illus. Nov.-Dec. 1965. WR 122: 34
Elk have increased from 330 in 1948-49 to 600 in 1965, based on trend counts and harvest.

Terlecki, S., J. T. Done, and F. G. Clegg. ENZOOTIC ATAXIA OF RED DEER. British Vet. J. 120(7): 311-321. 1964. [From Biol. Abstr. 46(23), 1965.] WR 122: 34
[Cent. Vet. Lab., Weybridge, Surrey, England.]

Tkachenko, A. A. [INFORMATION ON THE STUDY AND ECONOMIC USE OF WILD UNGULATES.] Sbornik Rabot Lesovodstvu Okhotovedeniya Krymskoe Gos. Zapovednokhotnich'e Khoz. 7: 63-87. 1963. [From Biol. Abstr. 46(22), 1965, from Referat. Zhur., Biol., 1964, no. 17I229. Transl. of Russian abstr.] WR 122: 34

Yazan, Yu. P. [CONDITION OF PASTURES AT THE MOST IMPORTANT PLACES WHERE ELKS SPEND THE WINTER IN THE PECHORO-ILYCH GAME PRESERVE REGION (KOMI ASSR).] Trudy Pechoro-Ilychskogo Gos. Zapovednika 11: 19-30. 1964. [From Biol. Abstr. 46(23), 1965, from Referat. Zhur., Biol., 1965, no. 11206. Transl. of Russian abstr.] WR 122: 35

Zaripov, R. Z., and V. A. Znamenskii. [THE NUMBER, DISTRIBUTION, AND FEASIBILITY OF USING ELK IN THE TATAR ASSR.] In: (Natural resources in the Volga-Kama district. Fauna.) Nauka (Moscow). p. 16-29. 1964. [From Biol. Abstr. 46(23), 1965, from Referat. Zhur., Biol., 1965, no. 11204. Transl. of Russian abstr.] WR 122: 35

DEER (Odocoileus)

Anderson, Roy C. THE DEVELOPMENT OF PNEUMOSTRONGYLUS TENUIS IN THE CENTRAL NERVOUS SYSTEM OF WHITE-TAILED DEER. Pathol. Veterinaria 2(4): 360-379, illus. 1965. [From Biol. Abstr. 47(5), 1966. With German summ.] WR 122: 35
[Ontario Res. Foundation, Toronto, Ontario, Canada.]

Brunett, Louis E., and Victor W. Lambou. A TEST OF TRACK COUNTS AS A MEASUREMENT OF DEER POPULATION SIZE. Proc. 16th Ann. Conf. SE Assoc. Game & Fish Comms. p. 29-31. 1962 [1965]. WR 122: 35
[La. Wild Life & Fisheries Comm., Alexandria.] Abstract: Three 160 acre deer enclosures were stocked with 2, 4, and 8 deer respectively. Track counts were made simultaneously on prepared surfaces in the enclosures. It was found that the track counts were not directly proportional to population size. Thus it appears that track counts are not a valid measurement of population size, if a linear relationship through the origin between population size and number of tracks is assumed. The track counts were able to detect that there were differences in population size, but it did not tell us the magnitude of this difference.

Crawford, H. S., and R. G. Leonard. THE SYLAMORE DEER STUDY. Proc. 17th Ann. Conf. SE Assoc. Game & Fish Comms. p. 9-13. 1963 [1965]. WR 122: 35
[Southern Forest Expt. Sta., New Orleans, La.] Abstract: A study of the effects of forest management systems on deer carrying capacity in the Arkansas Ozarks has been established in two enclosures of 600 and 670 acres. Preliminary analysis indicated that cedar and pine-hardwood types produce more available forage than oak-hickory stands. Forage utilization appeared inversely related to size of the mast crop. Deer in the enclosures were estimated by driving, removed by trapping and hunting, and replaced with known numbers of deer. Hunter success was affected by weather and hunter ability but not by number of deer.

Crouch, Glenn L. EFFECTS OF SIMULATED DEER BROWSING ON DOUGLAS-FIR SEEDLINGS. J. Forestry 64(5): 322-326, 3 figs. May 1966. WR 122: 35
[Forest Serv., USDA, Olympia, Wash.] Abstract: Douglas-fir seedlings were planted on four different microsites in the Tillamook Burn of northwest Oregon and slipped to simulate browsing by deer. Survival of seedlings after one field growing season was significantly greater on a recently disturbed site with relatively sparse vegetative cover than on sites dominated by stands of Vaccinium parvifolium, Rubus parviflorus, and Acer circinatum. Survival was also correlated with the amount of clipping. Height growth of unclipped seedlings was poorest on the more shaded site. Light to moderate browsing during the first winter field season did not adversely affect survival.

Dealy, J. Edward. SPOTLIGHTING DEER: POTENTIALS FOR MANAGEMENT IN WESTERN OREGON. U.S. Forest Serv. Res. Note PNW-32. 8 p., 3 figs. 1966. WR 122: 35
Spotlighting can provide useful information concerning population trends, habitat preference, and other facets of deer management such as herd composition. As a management tool, spotlighting falls in the category of track counts, daylight trend counts, aerial counts, and pellet counts, all of which are currently in use with varying degrees of confidence.

Evans, W., and M. Friend. MASTITIS IN A WILD WHITE-TAILED DEER. Bull. Wildl. Disease Assoc. 1(3): 35. July 1965. WR 122: 36
[Wildl. Res. Lab., Delmar, N.Y.]

Flyger, Vagn, and Theodore Thoerig. CROP DAMAGE CAUSED BY MARYLAND DEER. Proc. 16th Ann. Conf. SE Assoc. Game & Fish Comms. p. 45-52, 2 figs. 1962 [1965]. WR 122: 36
[Nat. Resources Inst., Univ. Md., College Park.]

Hibler, Charles P. DESCRIPTION OF THE MICROFILARIA OF WEHRDIKMANSIA CERVIPEDIS (WEHR AND DIKMANS, 1935) AND OBSERVATIONS ON ITS LOCATION IN ARIZONA DEER. Bull. Wildl. Disease Assoc. 1(4): 44-48, 1 fig. Oct. 1965. WR 122: 36
[Colo. State Univ., Fort Collins.] Abstract: Five of nine mule deer (Odocoileus hemionus) and all of eight white-tailed deer (O. virginianus) examined in central Arizona had microfilariae of Wehrdikmansia cervipedis (Wehr and Dikmans, 1935) in skin from the ear, but none in the blood, heart, lung, or skin from other areas of the body. These microfilariae, here described for the first time, averaged 224 microns long and 6 microns wide and had a sharply pointed tail. They do not have a sheath or an inner body. Adult W. cervipedis were found under the skin at the base of the ear in one mule and one white-tailed deer. The results suggest the ear may be the site of predilection for adults, as well as the microfilariae.

Hoffman, Roger A., and Paul F. Robinson. CHANGES IN SOME ENDOCRINE GLANDS OF WHITE-TAILED DEER AS AFFECTED BY SEASON, SEX AND AGE. J. Mammal. 47(2): 266-280, 8 figs. May 1966. WR 122: 36
[Colgate Univ., Hamilton, N.Y.] Abstract: A total of 187 male and female white-tailed deer of various ages, collected during the several months of the year, provided data on changes in body-organ weights and other measurements as they are affected by season, sex and age. All animals showed a loss of weight during the late winter. Lens weights increased progressively in a straight line from age 4 months through 12 months. This curve of lens weight from all-aged animals was parabolic in shape. Minimal width of the zona glomerulosa, zonae fasciculata/reticularis, minimal weights of the body, adrenal and thyroid glands, maximal thyroidal colloid and minimal thyroid cell height were all found to occur in mid or late winter. These data are discussed in relation to food supplies, the environmental factors of light and temperature and the sexual activity which occurs at this time. Maximal weights and activity of the various endocrine glands did not appear to be synchronized with any major environmental factor or physiological activity.

Lewis, James C. PRELIMINARY X-RAY STUDIES OF DEER PRODUCTIVITY NEAR CROSSVILLE, TENNESSEE. Proc. 16th Ann. Conf. SE Assoc. Game & Fish Comms. p. 24-28. 1962 [1965]. WR 122: 36
[Tenn. Game & Fish Comm., Nashville.] Abstract: Handling techniques for x-raying trapped doe deer are described. Myothesia was used as an anaesthetic at the rate of 1.5 cc. per 5 pounds body weight. A portable x-ray machine with maximum output of 30 MA and 80 KV was used to x-ray eight dead and forty-eight live deer. Pictures were made of yearling deer (12-14 cm. width) at 0.5 second exposure time, 36-inch focal-film distance, 25 milliamps and 65 kilovolts. Machine settings were the same for older deer, except kilovoltage, which increased 2 kilovolts per cm. of deer width. Radiographs indicated that 52 deer contained an average of 0.83 fetus and none of the 23 yearlings were shown to be pregnant. The adult does averaged 1.5 fetuses. Aging of fetal images on the x-ray is discussed. Evidence of prenatal mortality was not found.

Lueth, Francis X. A COMPARISON OF SOME AGING TECHNIQUES FOR ALABAMA DEER. Proc. 17th Ann. Conf. SE Assoc. Game & Fish Comms. p. 31-37, 3 figs. 1963 [1965]. WR 122: 37

[Ala. Dept. Conserv., Montgomery.] Conclusions: The tooth development method of age determination is not infallible. However, it can be used with a high degree of accuracy if reference jaw-boards are prepared from specimens collected in the vicinity of the study area. In Alabama, the eye lens weight technique of aging apparently is not accurate beyond the 0.5-year age class. It may be a fair to good indication of nutrition. Live weights, antler diameters and perhaps other measurements of growth are equally as good indicators of nutrition as are lens weights. In order to effectively and efficiently utilize all available deer kill data, it should be separated and analyzed according to individual herds, or relatively small geographical areas, rather than on a statewide basis.

Mangold, Robert E. WHAT'S YOUR DEER WORTH? N. J. Outdoors 16(6): 12-16, illus. Dec. 1965. WR 122: 37

Based on postcard surveys of firearm license holders. Information derived on expenditures and success of hunters. Bucks were valued at $57 and $87, respectively, by bowhunters and gunhunters. Figures for antlerless deer were $40 and $72 for these two groups of hunters.

Nellis, Carl H. LENS WEIGHTS OF MULE DEER FETUSES. J. Wildl. Mgmt. 30(2): 417-419, 1 fig. Apr. 1966. WR 122: 37

[Alberta Res. Council, Rochester, Alberta, Canada.] Abstract: Lens weights of 16 mule deer (Odocoileus hemionus) fetuses indicate that the lens technique can be perfected for aging prenatal deer. The sex of the fetus had no effect on lens weight. Body weight and lens weight are apparently positively correlated. Aging accuracy may decrease for fetuses less than 60 days old.

Peabody, Bill. KANSAS' FIRST DEER SEASON. Kans. Fish & Game 23(2): 3-7, 11. 1966. WR 122: 37

The total legal harvest in 1965 was 1500 deer--which represented 4% of Kansas' deer population.

Robinette, W. Leslie. MULE DEER HOME RANGE AND DISPERSAL IN UTAH. J. Wildl. Mgmt. 30(2): 335-349. Apr. 1966. WR 122: 37

[Coll. African Wildl. Mgmt., Field Box 3031, Mashi, Tanzania.] Abstract: Data from more than 900 mule deer (Odocoileus hemionus) fawns tagged shortly after birth and 32 older animals trapped and tagged during winter provided information on home range and dispersal. Most of the fawns were individually marked, permitting subsequent field identification. Hunting returns from 241 deer provided information on dispersal. A total of 290 observations of 75 marked does and fawns, and 108 observations of 29 bucks, each observed 3 or more times, provided the data for home-range determinations. Home range is expressed as proportion of an animal's activity spent within a given distance from the "center of activity" as determined from a composite of all observations on each of two classes of deer (bucks; does and fawns). The home range of bucks exceeded that of does and fawns by about 50 percent. A method is presented for estimating size of home range from distance measurements between sightings of marked deer. Examples of dispersal (animals moving more than a mile from the area of birth and establishing a new home range) were few for fawns during their first summer, but frequent among yearlings. Sixty percent of bucks and 35 percent of does had apparently dispersed by the time they were 16 months of age. Thereafter little additional dispersal occurred among bucks, but for does the dispersal percentage and the distance between tagging and kill sites increased for 2- and 3-year-olds. Evidence is given of an annual reinvasion of an area where hunting removals exceeded the net production. The void was apparently filled by young deer dispersing from outside areas.

Segelquist, C. A. SEXING WHITE-TAILED DEER EMBRYOS BY CHROMATIN. J. Wildl. Mgmt. 30(2): 414-417, 2 figs. Apr. 1966. WR 122: 38

[Southern Forest Expt. Sta., Nacogdoches, Texas.] Abstract: Nuclei of embryonic white-tailed deer (Odocoileus virginianus) were examined for sexual dimorphism. Sex chromatin particles were found in nuclei of extra-embryonic membranes of female embryos, but were absent from males. The sex of eight differentiated embryos was correctly diagnosed. Sex chromatin particles were identified in the nuclei of three undifferentiated embryos which were diagnosed as females, but were absent from four others diagnosed as males. Differences in sex chromatin may be useful in augmenting embryonic sex ratio data.

Shah, K. V., G. B. Schaller, V. Flyger, and C. M. Herman. ANTIBODIES TO MYXOVIRUS PARAINFLUENZA 3 IN SERA OF WILD DEER. Bull. Wildl. Disease Assoc. 1 (3): 31-32. July 1965. WR 122: 38

[Johns Hopkins Univ. School Hyg. & Public Health, Baltimore, Md.]

Short, Henry L., Donald R. Dietz, and Elmer E. Remmenga. SELECTED NUTRIENTS IN MULE DEER BROWSE PLANTS. Ecology 47(2): 222-229, 2 figs. Early Spring 1966. WR 122: 38

[Southern Forest Expt. Sta., Nacogdoches, Texas.] Abstract: Nine plant species believed to be important to mule deer (Odocoileus hemionus) on the Cache la Poudre range of Colorado were collected at four seasons during 1961, from five study areas which varied in altitude from 6,400 to 10,300 ft. Eleven chemical components were analyzed for each of the 77 plant samples. In a deciduous species (Purshia tridentata) the percentage dry matter and crude fat, and the caloric content varied from high autumn-winter levels to low spring-summer values; and beta carotene and percentage protein, ash, phosphorus, potassium, calcium, sodium, and magnesium levels varied from low autumn-winter values to high spring-summer values. In an evergreen species (Juniperus scopulorum) the seasonal changes in plant chemistry were not so pronounced. Major variations in the measured components were attributable to two causes in the following order: (1) differences in nutrient levels between species; (2) differences in nutrient levels measured for one plant species at the four seasons. Minor variations were evident within single species when sampled in a specific season at different areas throughout its range. The normal and predictable variation in plant chemistry caused by seasonal changes in plant phenology and physiology has important implications to the nutrition and physiology of deer.

MAMMALS--MARINE

Andreeva, T. V., and A. V. Yablokov. [A REPORT OF NEW DEVELOPMENTS IN THE METHOD OF DETERMINING THE AGE OF BALEEN WHALES (MYSTACOCETI).] Zool. Zhur. 44 (1): 145-146, illus. 1965. [From Biol. Abstr. 47(2), 1966. In Russian with English summ.] WR 122: 38

[Inst. Animal Morphol., Acad. Sci. USSR, Moscow, USSR.] A clear cut stratification was found in cross sections of the tubuli composing medullar layer of baleen plates in 6 spp. of Mystacoceti. An investigation of 2 fin whales of a known age (the age being determined by the ear plug layers) showed the stratification in the tubuli of baleen plates to coincide in several instances with the age of the animal.

Anonymous. [COLLECTION OF SCIENTIFIC RESEARCH PAPERS FOR 1962. THE HARP SEAL AND THE CRESTED SEAL. NORTHERN DIVISION OF THE POLAR SCIENTIFIC RESEARCH AND PLANNING INSTITUTE OF MARINE FISHERIES AND OCEANOGRAPHY.] Knigoizdat (Arkhangel'sk). 136 p., illus. 1963. Price 46 kopecks. [From Biol. Abstr. 46(22), 1965, from Referat. Zhur., Biol., 1964, no. 19I234K. In Russian.] WR 122: 38

Arsen'ev, V. A., editor. [FUR SEALS OF THE SOVIET FAR EAST.] Izv. Tikhookeanskogo Nauch.-Issled. Inst. Rybn. Khoz. Okeanogr. (Moscow) 54: 1-188, illus. 1964. Price 1 ruble 17 kopecks. [From Biol. Abstr. 46(20), 1965, from Referat. Zhur., Biol., 1964, no. 19I233K. In Russian.] WR 122: 39

Arsen'ev, V. A. [THE INTERMINGLING OF POPULATIONS OF FUR SEALS (CALLORHINUS SPP.).] Izv. Tikhookeanskogo Nauch.-Issled. Inst. Rybn. Khoz. Okeanogr. 54: 75-81, maps. 1964. [From Biol. Abstr. 46(23), 1965, from Referat. Zhur., Biol., 1964, no. 18I221. Transl. of Russian abstr. Original with English summ.] WR 122: 39
In Fur Seals of the Soviet Far East. [See Arsen'ev above.]

Bourne, Arthur G. EXPLOITATION OF THE SMALL WHALES IN THE NORTH ATLANTIC. Oryx 8(3): 185-193, 6 figs. + 1 pl. Dec. 1965. WR 122: 39

Bychkov, V. A. [OBSERVATIONS OF THE FEMALE FUR SEALS (CALLORHINUS SPP.) ON TYULENI ISLAND.] Izv. Tikhookeanskogo Nauch.-Issled. Inst. Rybn. Khoz. Okeanogr. 54: 91-95. 1964. [From Biol. Abstr. 47(3), 1966, from Referat. Zhur., Biol., 1964, no. 18I223. Transl. of Russian abstr. Original with English summ.] WR 122: 39
In Fur Seals of the Soviet Far East. [See Arsen'ev above.]

Bychkov, V. A. [INFORMATION ON THE MOLTING OF FUR SEALS ON TYULENII ISLAND.] Izv. Tikhookeanskogo Nauch.-Issled. Inst. Rybn. Khoz. Okeanogr. 54: 131-142. 1964. [From Biol. Abstr. 46(20), 1965, from Referat. Zhur., Biol., 1964, no. 22I293. Transl. of Russian abstr. Original with English summ.] WR 122: 39
In Fur Seals of the Soviet Far East. [See Arsen'ev above.]

Caldwell, Melba C., David K. Caldwell, and J. B. Siebenaler. OBSERVATIONS ON CAPTIVE AND WILD ATLANTIC BOTTLENOSED DOLPHINS, TURSIOPS TRUNCATUS, IN THE NORTHEASTERN GULF OF MEXICO. Los Angeles County Mus. Contrib. Sci. 91: 1-10. 1965. [From Biol. Abstr. 47(1), 1966.] WR 122: 39
[Univ. Southern Calif., Los Angeles.]

Carlisle, John G., Jr., and J. A. Aplin. SEA LION CENSUS FOR 1965 INCLUDING COUNTS OF OTHER CALIFORNIA PINNIPEDS. Calif. Fish & Game 52(2): 119-120. Apr. 1966. WR 122: 39
[Calif. Dept. Fish & Game, Sacramento.] The decrease [11.5%] in total numbers of sea lions since 1961, as indicated by the 1965 count of 22,167 is probably not significant. A significant fluctuation was noted for the northern elephant seals on San Miguel Island from 800 in 1961, to 3,000 in 1965.

Chittleborough, R. G. DYNAMICS OF TWO POPULATIONS OF THE HUMPBACK WHALE, MEGAPTERA NOVAENGLIAE (BOROWSKI). Australian J. Mar. Freshwater Res. 16(1): 33-128, illus., map. 1965. [From Biol. Abstr. 46(22), 1965.] WR 122: 39
[CSIRO, Cronulla, New South Wales, Australia.]

de Carvalho, C. T. SÔBRE UM BÔTO COMUM NO LITORAL DO BRASIL. [A COMMON PORPOISE ON THE COAST OF BRAZIL.] Rev. Brasil Biol. 23(3): 263-276, illus. 1963. [From Biol. Abstr. 46(24), 1965. In Portuguese with English summ.] WR 122: 39
[Dept. Zool., São Paulo, Brazil.] Four female and one young male porpoises from the coast of São Paulo and Rio de Janeiro are described. These are called, provisionally, because of the confused state of the nomenclature, Sotalia guianensis.

Dorofeev, S. V. [THE FUR SEAL (CALLORHINUS URSINUS).] Izv. Tikhookeanskogo Nauch.-Issled. Inst. Rybn. Khoz. Okeanogr. 54: 23-50. 1964. [From Biol. Abstr. 46(23), 1965, from Referat. Zhur., Biol., 1964, no. 18I216. Transl. of Russian abstr. Original with English summ.] WR 122: 39
In Fur Seals of the Soviet Far East. [See Arsen'ev above.]

Dorofe[e]v, S. V., and V. A. Bychkov. [BIOLOGICAL GROUNDS FOR REGULATING THE POPULATION SIZE OF THE MATURE MALE FUR SEAL (CALLORHINUS URSINUS) ON TYULENI ISLAND.] Izv. Tikhookeanskogo Nauch.-Issled. Inst. Rybn. Khoz. Okeanogr. 54: 83-90. 1964. [From Biol. Abstr. 47(3), 1966, from Referat. Zhur., Biol., 1964, no. 18I222. Transl. of Russian abstr. Original with English summ.] WR 122: 40

In Fur Seals of the Soviet Far East. [See Arsen'ev, p. 39.]

Evdokimov, E. I. [OBSERVATIONS MADE ON THE FUR SEALS (CALLORHINUS SPP.) IN THE SEA OF OKHOTSK IN 1958.] Izv. Tikhookeanskogo Nauch.-Issled. Inst. Rybn. Khoz. Okeanogr. 54: 61-63. 1964. [From Biol. Abstr. 46(23), 1965, from Referat. Zhur., Biol., 1964, no. 18I218. Transl. of Russian abstr. Original with English summ.] WR 122: 40

In Fur Seals of the Soviet Far East. [See Arsen'ev, p. 39.]

Fiscus, Clifford H., and Gary A. Baines. FOOD AND FEEDING BEHAVIOR OF STELLER AND CALIFORNIA SEA LIONS. J. Mammal. 47(2): 195-200. May 1966. WR 122: 40

[Marine Mammal Biol. Lab., Seattle, Wash.] Abstract: Sea lions taken on land usually have empty stomachs. To obtain sea lions with food in their stomachs, 34 Steller sea lions and 7 California sea lions were taken at sea. Stomachs of California sea lions contained squids, hake and anchovies. Stomachs of Steller sea lions taken off California and Oregon contained flatfishes and rockfishes; those taken in Alaskan waters contained capelin, sand lance, rockfishes, sculpins, and flatfishes; one had fed on salmon. California sea lions were observed 39 miles and Steller sea lions 85 miles offshore. Large groups feed within 15 miles of land. Farther offshore, sea lions usually occur singly or in small groups of 2 to 12 animals. In summer and early fall, at least, the majority of animals may leave hauling grounds early in the morning and return in late afternoon. No extensive predation on commercial fishes was found. One sea lion contained food amounting to 9.4% of its body weight.

Hobson, Edmund S. VISUAL ORIENTATION AND FEEDING IN SEALS AND SEA LIONS. Nature 210(5033): 326-327. 16 Apr. 1966. WR 122: 40

[Univ. Calif., Los Angeles.] "Zalophus californianus and Phoca vitulina."

Khuzin, R. Sh. [INFORMATION ON THE BIOLOGY AND CATCHING OF THE HARP SEAL (PHOCA GROENLANDICA) IN NEWFOUNDLAND.] Trudy Polyarnogo Nauch.-Issled. Proektn. Inst. Morskogo Rybn. Khoz. Okeanogr. 15: 235-249. 1963. [From Biol. Abstr. 46(23), 1965, from Referat. Zhur., Biol., 1964, no. 18I233. Transl. of Russian abstr.] WR 122: 40

Studies were made of the age-sexual composition, dynamics of the age groups in the rookeries, reproduction, feeding habits, and growth rates of the harp seal.

Khuzin, R. Sh., and V. A. Potelov. [A STUDY OF THE PHOCID SEALS AROUND JAN MAYEN ISLAND.] Materialy Rybokhozyaistvennykh Issled. Severnoi Basseina (Murmansk) 1: 48-51. 1963. [From Biol. Abstr. 46(20), 1965, from Referat. Zhur., Biol., 1964, no. 15I307. Transl. of Russian abstr.] WR 122: 40

Khuzin, R. Sh., and M. Ya. Yakovenko. [DISTRIBUTION AND BIOLOGY OF THE HOODED SEAL (CYSOPHORA CRISTATA) IN THE GREENLAND SEA.] Trudy Polyarnogo Nauch.-Issled. Proektnogo Inst. Morskogo Rybn. Khoz. Okeanogr. 15: 251-261. 1963. [From Biol. Abstr. 46(23), 1965, from Referat. Zhur., Biol., 1964, no. 18I227. Transl. of Russian abstr.] WR 122: 40

Kleinenberg, S. E., and G. A. Klevezal'. [CONTRIBUTIONS TO THE METHOD OF AGE DETERMINATION OF TOOTHED WHALES.] Doklady Akad. Nauk SSSR Biol. Sci. Sect. (Transl.) 145(1/6): 889-891, illus. 1963. [From Biol. Abstr. 47(8), 1966, from Doklady Akad. Nauk SSSR 145(2): 460-462. 1962.] WR 122: 40

[Severtsov Inst. Animal Morphol., Acad. Sci., Moscow, USSR.]

Kleinenberg, S. E., A. V. Yablokov, V. M. Bel'kovich, and M. N. Tarasevich. [THE BELUGA. AN EXPERIMENT IN MONOGRAPHIC STUDY OF THE SPECIES.] Nauka (Moscow). 454 p., 118 figs. 1964. Price 2 rubles 10 kopecks. [From Biol. Abstr. 46(19), 1965, from Referat. Zhur., Biol., 1964, no. 24I232K. Transl. of Russian abstr.] WR 122: 41

On the basis of descriptions of the morphology, distribution, ecology, fishing for belugas, and the taxonomy of the most widely distributed beluga (Delphinapterus leucas) an attempt is made to survey the principal problems blocking the way to a study of the entire order of cetaceans. Special attention is devoted to the structure of the skin covering, skeleton, and musculature, the digestive, respiratory, and urogenital systems, distribution in Soviet waters, patterns of approach to the shore, reproduction, behavior, history, and fishing methods. With more than 800 references.

Lang, Thomas G., and Kenneth S. Norris. SWIMMING SPEED OF A PACIFIC BOTTLENOSE PORPOISE. Science 151(3710): 588-590, 1 fig. 4 Feb. 1966. WR 122: 41

[U.S. Naval Ordnance Test Sta., Pasadena, Calif.] Four kinds of speed runs showed a Pacific bottlenose porpoise (Tursiops gilli) to have a top speed of 29.9 kilometers per hour (16.1 knots) for 7.5 seconds and a top speed of 21.9 kilometers per hour (11.8 knots) for 50 seconds.--From abstr.

Lugg, D. J. ANNUAL CYCLE OF THE WEDDELL SEAL IN THE VESTFOLD HILLS, ANTARCTICA. J. Mammal. 47(2): 317-322, 1 pl. May 1966. WR 122: 41

[Antarctic Div., Dept. External Affairs, Melbourne, Australia.] Abstract: Weddell seals, Leptonychotes weddelli, were observed in the Vestfold Hills, Antarctica, from February 1963 until March 1964, by members of the Australian National Antarctic Research Expeditions. Some seals were marked, enabling data to be gathered on their annual cycle. During the short summer a few seals were found molting on the mainland beaches, while a decrease in numbers occurred throughout the winter. In spring the seals reappeared, and the observed pupping season was from 14 October to late November. Between 150 and 200 seals are born annually. Female seals hauled out and pupped within 24 hours. Among 60 newborn pups examined 32 were females and 28 males. Pups could swim at 4 weeks, and were weaned at 6 weeks. Two weeks after weaning the pups and mothers separated. The mortality of the pups was extremely low. The louse, Antarctophthirus ogmorhini (Enderlein, 1906), was not found on young pups until after they had attained their adult coat. Some male seals were absent from the area until after the peak of the pupping in the last week of October. Following the breakup of the breeding colonies in December, no concentrations of seals were found until the following spring.

McCann, Charles. KEYS TO THE SEALS (PINNIPEDIA) OF NEW ZEALAND. Tuatara 12 (1): 40-49, illus. 1964. [From Biol. Abstr. 47(4), 1966.] WR 122: 41

[Dominion Museum, Wellington, New Zealand.]

Muzhchinkin, V. F. [DISTRIBUTION OF SEA-LIONS (EUMETOPIAS STELLERI) IN THE SOUTHEASTERN FUR SEAL HAULING OUT GROUNDS OF MEDNYI ISLAND.] Izv. Tikhookeanskogo Nauch.-Issled. Inst. Rybn. Khoz. Okeanogr. 54: 179-186. 1964. [From Biol. Abstr. 46(23), 1965, from Referat. Zhur., Biol., 1964, no. 18I225. Transl. of Russian abstr. Original with English summ.] WR 122: 41

In Fur Seals of the Soviet Far East. [See Arsen'ev, p. 39.]

Nesterov, G. A. [INFORMATION ON THE BIOLOGY AND POPULATION SIZE OF THE SEA-LIONS (EUMETOPIAS STELLERI) OF THE COMMANDER ISLANDS.] Izv. Tikhookeanskogo Nauch.-Issled. Inst. Rybn. Khoz. Okeanogr. 54: 173-177. 1964. [From Biol. Abstr. 46(23), 1965, from Referat. Zhur., Biol., 1964, no. 18I224. Transl. of Russian abstr. Original with English summ.] WR 122: 41

In Fur Seals of the Soviet Far East. [See Arsen'ev, p. 39.]

Panina, G. K. [FEEDING HABITS OF THE FUR SEAL (CALLORHINUS SPP.) IN THE SEA OF JAPAN.] Izv. Tikhookeanskogo Nauch.-Issled. Inst. Rybn. Khoz. Okeanogr. 54: 67-73. 1964. [From Biol. Abstr. 46(23), 1965, from Referat. Zhur., Biol., 1964, no. 18I220. Transl. of Russian abstr. Original with English summ.] WR 122: 42

In Fur Seals of the Soviet Far East. [See Arsen'ev, p. 39.]

Pedersen, Alwin. RINGSAELEN. [THE RINGED SEAL.] Grønland 2: 307-314, illus. 1964. [From Biol. Abstr. 47(7), 1966. In Norwegian.] WR 122: 42

The ringed seal (Pusa hispida) is the most common seal in Arctic waters with a population estimated between 2 and 5 million. The animal kill in Greenland is about 53,000 (1958/59) where it is the most important food animal of the people.

Pimlott, Douglas H. SEALS AND SEALING IN THE NORTH ATLANTIC. Canadian Audubon 28(2): 33-39, illus. Mar.-Apr. 1966. WR 122: 42

Deals with the history of public interest in sealing, observations of the 1966 hunt, life history of seals, seal populations and mortality, the sealing industry, and the future of harp seals. The average kill of harp seals in the western Atlantic for the ten years preceding World War II was approximately 150,000. The average kill from 1950 to 1965 was in excess of 250,000. The research data suggested that the annual kill for the period should not have been higher than 200,000.

Popov, L. A., and V. A. Potelov. [SOME REGULAR DISTRIBUTION PATTERNS OF THE HARP SEAL (PHOCA GROENLANDICA) OF THE GREENLAND SEA IN THE PERIOD WHEN THE ROOKERIES ARE FORMED.] Sbornik Nauch.-Issled. Rabot Sev. Otd. Polyarnogo Nauch.-Issled. Proektn. Inst. Morskogo Khoz. Okeanogr. p. 41-47. 1962. [From Biol. Abstr. 46(23), 1965, from Referat. Zhur., Biol., 1964, no. 18I230. Transl. of Russian abstr.] WR 122: 42

Potelov, V. A. [A DESCRIPTION OF THE STOCKS OF YOUNG HOODED SEALS (CYSTOPHORA CRISTATA) IN THE GREENLAND SEA.] Sbornik Nauch.-Issled. Rabot Sev. Otd. Polyarnogo Nauch.-Issled. Proektn. Inst. Morskogo Rybn. Khoz. Okeanogr. p. 53-63. 1962. [From Biol. Abstr. 46(23), 1965, from Referat. Zhur., Biol., 1964, no. 18I228. Transl. of Russian abstr.] WR 122: 42

Sokolov, A. S. [FOOD OF THE LADOGA SEAL AND THE ADVISABILITY OF ITS COMMERCIAL HUNTING.] Rybn. Khoz. 10: 25-27. 1958. [From Biol. Abstr. 47(5), 1966, from Referat. Zhur., Biol., 1959, no. 63047. Transl. of Russian abstr.] WR 122: 42

Surkov, S. S. [THE METHOD OF DETERMINING THE POPULATION SIZE AND THE KILLING RATES OF WHITE SEA CRESTED SEALS.] Trudy Polyarnogo Nauch.-Issled. Proektn. Inst. Morskogo Rybn. Khoz. Okeanogr. 15: 271-279. 1963. [From Biol. Abstr. 46 (22), 1965, from Referat. Zhur., Biol., 1964, no. 20I301. Transl. of Russian abstr.] WR 122: 42

Tikhomirov, E. A. [FINDING FUR SEALS (CALLORHINUS SPP.) IN THE SEA OF OKHOTSK.] Izv. Tikhookeanskogo Nauch.-Issled. Inst. Rybn. Khoz. Okeanogr. 54: 65-66. 1964. [From Biol. Abstr. 46(23), 1965, from Referat. Zhur., Biol., 1964, no. 18I219. Transl. of Russian abstr. Original with English summ.] WR 122: 42

In Fur Seals of the Soviet Far East. [See Arsen'ev, p. 39.]

Tikhomirov, E. A., and G. A. Klevezal'. [METHODS FOR DETERMINING THE AGE OF SOME PINNIPEDS.] In: (Determination of the age of commercial pinnipeds and the efficient use of marine mammals.) Nauka (Moscow). p. 5-20. 1964. [From Biol. Abstr. 47(1), 1966, from Referat. Zhur., Biol., 1964, no. 24I233. Transl. of Russian abstr.] WR 122: 42

Ximenez, I. ESTUDIO PRELIMINAR DE LA DISTRIBUCIÓN GEOGRÁFICA ACTUAL DE LOS PINIPEDOS EN AMÉRICA LATINA. [PRELIMINARY STUDY OF PRESENT GEOGRAPHIC DISTRIBUTION OF PINNIPEDS IN LATIN AMERICA.] Bol. Inst. Biol. Mar Mar Del Plata 7: 65-72. 1964. [From Biol. Abstr. 47(1), 1966. In Spanish.] WR 122: 43

Yakovenko, M. Ya. [THE DEVELOPMENT OF HUNTING FOR THE WHITE SEA CRESTED SEAL AND THE PROBLEM OF ITS NUMBERS.] Trudy Polyarnogo Nauch.-Issled. Proektn. Inst. Morskogo Rybn. Khoz. Okeanogr. 15: 199-214. 1963. [From Biol. Abstr. 46(22), 1965, from Referat. Zhur., Biol., 1964, no. 20I300. Transl. of Russian abstr.] WR 122: 43

Yakovenko, M. Ya., Yu. I. Nazarenko, and Yu. K. Timoshenko. [BRIEF RESULTS OF HUNTING AND SOME RESULTS OF A STUDY OF THE WHITE SEA HARP SEAL IN 1962.] In: (Collection of scientific research papers. Northern Division of the Polar Scientific Research and Planning Institute of Marine Fisheries and Oceanography.) (Arkhangel). p. 4-23. 1962. [From Biol. Abstr. 46(19), 1965, from Referat. Zhur., Biol., 1964, no. 20I299. Transl. of Russian abstr.] WR 122: 43

MAMMALS--OTHER GROUPS

LaPlante, E. S., and R. G. Burrell. BACTERIAL ENDOCARDITIS IN OPOSSUMS. Bull. Wildl. Disease Assoc. 2(1): 10-12, 2 figs. Jan. 1966. WR 122: 43
[W. Va. Univ., Morgantown.]

Vaz-Ferreira, R., and E. Palerm. ASOCIACIÓN MATERNAL EN DIDELPHIS AZARAE TEMMINCK. [MATERNAL ASSOCIATION IN DIDELPHIS AZARAE TEMMINCK.] Arch. Soc. Biol. Montevideo 25: 38-46, illus. 1960. [From Biol. Abstr. 47(3), 1966. In Spanish with English summ.] WR 122: 43

BIRDS--GENERAL

Bulmer, Ralph. BIRDS AS POSSIBLE AGENTS IN THE PROPAGATION OF THE SWEET-POTATO. Emu 65(3): 165-182. Jan. 1966. WR 122: 43
[Univ. Auckland, New Zealand.]

Sapetin, Ya. V. [EXPERIENCE IN COUNTING AND TRAPPING AQUATIC BIRDS IN THE CENTRAL OBLASTS OF THE EUROPEAN PART OF THE RSFSR.] In: (Problems of ornithology.) L'vovsk. Univ. (L'vov). p. 113-119. 1964. [From Biol. Abstr. 46(20), 1965, from Referat. Zhur., Biol., 1964, no. 23I131. Transl. of Russian abstr.] WR 122: 43

Thomson, A. Landsborough. AN ANALYSIS OF RECOVERIES OF GREAT SKUAS RINGED IN SHETLAND. British Birds 59(1): 1-15, 3 figs. Jan. 1966. WR 122: 43

Vorob'ev, K. A., editor. [THE BIRD FAUNA AND THE ECOLOGY OF BIRDS OF THE VOLGA DELTA AND THE CASPIAN SEA LITTORAL.] Trudy Astrakhanskogo Zapovednika Volga (Astrakhan) 8: 1-423, illus. 1963. Price 1 ruble 98 kopecks. [From Biol. Abstr. 46(22), 1965, from Referat. Zhur., Biol., 1964, no. 19I164K. Transl. of Russian abstr.] WR 122: 43
A collection of papers on problems of making censuses (pheasant, mute swan); overwintering (aquatic and other birds); there are also ecological-faunistic studies of predatory birds and gulls. A complete list of the bird fauna of the Delta is given.

BIRDS--TECHNIQUES

Naumov, R. L. [A METHOD OF MAKING AN ABSOLUTE CENSUS OF BIRDS ON ROUTES DURING THE NESTING PERIOD.] Zool. Zhur. 44(1): 81-94. 1965. [From Biol. Abstr. 47(3), 1965. In Russian with English summ.] WR 122: 43
[Inst. Med. Parasitol. Trop. Med., Min. Health USSR, Moscow, USSR.]

BIRDS--TECHNIQUES--Continued

Vilks, E. K. [REPRODUCTION OF TAPE-RECORDED BIRD ALARM CRIES FOR THE CONTROL OF HARMFUL ACTIVITIES OF SOME SPECIES.] In: (Problems of ornithology.) L'vovsk. Univ. (L'vov). p. 138-141. 1964. [From Biol. Abstr. 46(19), 1965, from Referat. Zhur., Biol., 1964, no. 23I221. Transl. of Russian abstr.] WR 122: 44

BIRDS--MORPHOLOGY & PHYSIOLOGY

Borodulina, T. L. [MORPHOLOGICAL ADAPTATIONS OF BIRDS TO AN AQUATIC WAY OF LIFE.] Ornitologiya (Moscow) 6: 456-460. 1963. [From Biol. Abstr. 46(19), 1965, from Referat. Zhur., Biol., 1964, no. 21I130. Transl. of Russian abstr.] WR 122: 44

Kuroda, Nagahisa. ANALYSIS OF VARIATION BY SEX, AGE AND SEASON OF BODY WEIGHT, FAT AND SOME BODY PARTS IN THE DUSKY THRUSH, WINTERING IN JAPAN: A PRELIMINARY STUDY. Misc. Rept. Yamashina Inst. Ornithol. Zool. 4(2): 91-104. 1964. [From Biol. Abstr. 46(23), 1965.] WR 122: 44

Kuroda, Nagahisa. DATA ON BODY WEIGHT, FAT WEIGHT AND GONAD SIZE OF LIGHTHOUSE STRUCK AND OTHER BIRDS. Misc. Rept. Yamashina Inst. Ornithol. Zool. 4(2): 71-75. 1964. [From Biol. Abstr. 46(23), 1965.] WR 122: 44

McNab, Brian K. AN ANALYSIS OF THE BODY TEMPERATURES OF BIRDS. Condor 68 (1): 47-55, 1 fig. Jan.-Feb. 1966. WR 122: 44
[Univ. Fla., Gainesville.] The following conclusions were derived: low body temperatures indicate low rates of metabolism or high conductances which may reflect ecological requirements; birds have higher body temperatures than mammals of the same weight because the birds have higher rates of metabolism and usually have lower rates of heat loss; small birds have higher body temperatures than large birds because the small birds have higher rates of heat production relative to weight; there is a correlation of body temperature with weight and taxonomic group; there are departures in body temperatures from those predicted from weights due to modifications of the rate of metabolism; the insulation of birds weighing less than 20 g is equal to that of mammals of the same weight; the small weight of some of the smallest birds poses a problem of energy conservation which is met by a reduction in the basal rate of metabolism.--From concl. and summ.

Newton, I. FLUCTUATIONS IN THE WEIGHTS OF BULLFINCHES. British Birds 59 (3): 89-100. Mar. 1966. WR 122: 44
[Edward Grey Inst., Oxford, England.]

BIRDS--BEHAVIOR & MIGRATION

Ashmole, N. Philip. ADAPTIVE VARIATION IN THE BREEDING REGIME OF A TROPICAL SEA BIRD. Proc. Nat. Acad. Sci. 53(2): 311-318, illus. 1965. [From Biol. Abstr. 47(5), 1966.] WR 122: 44
[Yale Univ., New Haven, Conn.] "Sterna fuscata."

Bateson, P. P. G. THE CHARACTERISTICS AND CONTEXT OF IMPRINTING. Biol. Rev. 41(2): 177-220. May 1966. WR 122: 44
[Madingley, Cambridge, England.] A review paper. "Since it is simpler to suppose that imprinting is not a special process, an attempt is made to place it in a broader theoretical framework. In conclusion it is pointed out that imprinting is only one example of many in which preferences and habits are restricted by experience."--From summ.

Boswall, Jeffery. PIED WAGTAILS ROOSTING INSIDE GREENHOUSES. British Birds 59(3): 100-106. Mar. 1966. WR 122: 44
Communal roosting by Motacilla alba yarrellii in greenhouses. Possible advantages of greenhouse roosting are shelter from the elements and added protection from predators.--From summ.

Das, A. R. K. THE BREEDING BIOLOGY OF NECTARINIA ASIATICA (LATHAN). Pavo 2(2): 71-83, illus. 1964. [From Biol. Abstr. 46(22), 1965.] WR 122: 45
[Maharaja Sayajirao Univ. Baroda, Baroda, India.]

Delvingt, W. RÉGULATION DES MIGRATIONS AVIENNES. [THE REGULATION OF BIRD MIGRATIONS.] Gerfaut Rev. Belg. Ornithol. 52(4): 644-652. 1962. [From Biol. Abstr. 46(19), 1965. In French with Dutch summ.] WR 122: 45
[Inst. Agron., Gembloux, Belgium.]

Eigelis, Yu. K. [FEEDING HABITS AND ECONOMIC IMPORTANCE OF THE MAGPIE (PICA PICA) IN DECIDUOUS AND PINE STANDS OF THE STEPPE AND FOREST-STEPPE OF THE EUROPEAN PART OF THE USSR.] Zool. Zhur. 43(10): 1517-1529. 1964. [From Biol. Abstr. 46(19), 1965. In Russian with English summ.] WR 122: 45
[Azerbaidzhan Anti-Plague Sta., Baku, Azerbaidzh. SSR.]

Eigelis, Yu. K. [FEEDING HABITS OF JAY (GARRULUS GLANDARIUS) NESTLINGS.] Zool. Zhur. 44(1): 95-100. 1965. [From Biol. Abstr. 47(2), 1966. In Russian with English summ.] WR 122: 45
[Azerbaidzh. Anti-Plague Sta., Baku, Azerbaidzh. SSR.]

Ellis, C. R., Jr., and A. W. Stokes. VOCALIZATIONS AND BEHAVIOR IN CAPTIVE GAMBEL QUAIL. Condor 68(1): 72-80, 3 figs. Jan.-Feb. 1966. WR 122: 45
[Utah State Univ., Logan.] "Lophortyx gambelii."

Gofman, D. N., and L. P. Poznanin. [NESTING CONDITIONS FOR SOME HOLE-NESTING BIRDS.] In: (Summaries of reports from 5th Baltic Ornithological Conference.) (Tartu). p. 45-47. 1963. [From Biol. Abstr. 46(22), 1965, from Referat. Zhur., Biol., 1964, no. 16I176. Transl. of Russian abstr.] WR 122: 45

Hilden, Olavi. HABITAT SELECTION IN BIRDS. A REVIEW. Ann. Zool. Fennici 2(1): 53-75. 1965. [From Biol. Abstr. 47(8), 1966.] WR 122: 45
[Univ. Helsinki, Helsinki, Finland.] This review with 222 references, considers such factors as food, species characteristics, shelter, terrain, other species, competition and learning.

Kuroda, Nagahisa. COMPARISON OF MIGRATORY ADAPTATIONS IN THE RUSTIC AND BLACK-FACED BUNTINGS. Misc. Rept. Yamashina Inst. Ornithol. Zool. 4(2): 76-90. 1964. [From Biol. Abstr. 46(23), 1965.] WR 122: 45
"Emberiza rustica and E. spodocephala."

Lack, David, and Peter Lack. PASSERINE NIGHT MIGRANTS ON SKOKHOLM. British Birds 59(4): 129-141. Apr. 1966. WR 122: 45

Lasiewski, Robert C., and Henry J. Thompson. FIELD OBSERVATION OF TORPIDITY IN THE VIOLET-GREEN SWALLOW. Condor 68(1): 102-103. Jan.-Feb. 1966. WR 122: 45
[Univ. Calif., Los Angeles.] Three violet-green swallows (Tachycineta thalassina) were found seemingly dead on the surface of a sand dune. About 45 minutes after the sun's rays first struck the dunes, the swallows revived and flew from the dunes.

Lemon, Robert E. GEOGRAPHIC VARIATION IN THE SONG OF CARDINALS. Canadian J. Zool. 44(3): 413-428, 8 figs. May 1966. WR 122: 45
[Univ. Western Ontario, London, Canada.]

Lemon, Robert E., and D. M. Scott. ON THE DEVELOPMENT OF SONG IN YOUNG CARDINALS. Canadian J. Zool. 44(2): 191-197, 1 fig. + 4 figs. on 4 pls. Mar. 1966. WR 122: 45
[Univ. Western Ontario, London, Canada.] Abstract: Groups of cardinals, Richmondena cardinalis, hand-reared from the age of 5 to 8 days developed some of the simple sounds used by wild adults in their songs, but not the two- or three-parted sounds. Although reared in three groups: three together in a room, three singly in sound-isolation boxes, and four exposed to recorded

cardinal songs at 7 to 8 months, all isolates developed comparable songs. Observations on wild young in the field and in captivity indicate that much learning occurs during a cardinal's first summer, but some also occurs the following February and March.

Mezhennyi, A. A. [BIOLOGY OF THE NUTCRACKER (NUCIFRAGA CARYOCATACTES MACRORHYNCHUS) IN SOUTHERN YAKUTIYA.] Zool. Zhur. 43(11): 1679-1687. 1964. [From Biol. Abstr. 46(19), 1965. In Russian with English summ.] WR 122: 46
[Zool. Inst. Acad. Sci. USSR, Leningrad, USSR.]

Newton, Ian. BUD-EATING BY BULLFINCHES IN RELATION TO THE NATURAL FOOD-SUPPLY. J. Appl. Ecol. 1(2): 265-279, illus. 1964. [From Biol. Abstr. 46 (22), 1965.] WR 122: 46
[Edward Grey Inst., Oxford, England.]

Rabinowitch, Victor Eugene. THE ROLE OF EARLY EXPERIENCE IN THE DEVELOPMENT AND RETENTION OF FOOD HABITS IN SOME BIRDS. Ph.D. thesis, Univ. Wis. 65 p. 1965. [From Dissertation Abstr. 26(9), 1966.] WR 122: 46
Experiments were conducted on the development and retention of food preferences in captive chicks of herring and ring-billed gulls and in the young of laboratory-reared zebra finches. It is suggested that differences in food preferences among individuals in a population of birds may at times reflect variations in early food experiences. Similarities are drawn between the development of food preferences and other forms of early learning in birds, including imprinting.

Vince, Margaret A. POTENTIAL STIMULATION PRODUCED BY AVIAN EMBRYOS. Animal Behaviour 14(1): 34-40, 4 figs. + 1 pl. Jan. 1966. WR 122: 46
[Cambridge Psychol. Lab., Cambridge, England.] Summary: Simultaneous recordings were made of sounds and movements produced by avian embryos of six precocial and two passerine species during the final developmental stage before hatching when lung ventilation has begun. Sounds and movements occurred in all live embryos almost without a break. Characteristic rhythms occurring in all species were those of clicking and hatching.

Zonov, G. B., and B. G. Vodop'yanov. [WILLOW TITS SPEND WINTER NIGHTS IN RODENT BURROWS.] Doklady Irkutskogo Protivochumnogo Inst. 5: 153-155. 1963. [From Biol. Abstr. 46(23), 1965, from Referat. Zhur., Biol., 1964, no. 20I222. Transl. of Russian abstr.] WR 122: 46

BIRDS--MANUALS, FAUNAS, COMMUNITIES

Benson, C. W., and M. P. Stuart Irwin. THE BIRDS OF CRYPTOSEPALUM FORESTS, ZAMBIA. Arnoldia 1(28): 1-12. 12 Mar. 1965. WR 122: 46

Benson, C. W., and M. P. Stuart Irwin. THE BIRDS OF MARQUESIA THICKETS IN NORTHERN MWINILUNGA DISTRICT, ZAMBIA. Arnoldia 1(30): 1-4. 12 Mar. 1965. WR 122: 46

Bond, James. THE HYPOTHETICAL ELEMENT OF THE AVIFAUNA OF TOBAGO. Caribbean J. Sci. 2(3): 113-118. 1962. [From Biol. Abstr. 46(19), 1965.] WR 122: 46
[Acad. Nat. Sci., Philadelphia, Pa.]

Brooke, R. K. ORNITHOLOGICAL NOTES ON THE FURANCUNGO DISTRICT OF MOZAMBIQUE. Arnoldia 2(10): 1-13. 15 Nov. 1965. WR 122: 46

Chervonnyi, V. V. [A CENSUS OF THE WILD BIRDS OF THE PINE FORESTS IN THE SOSNOVSK FOREST AND HUNTING RANGE, LENINGRAD OBLAST.] Ornitologiya (Moscow) 6: 81-85. 1963. [From Biol. Abstr. 46(20), 1965, from Referat. Zhur., Biol., 1964, no. 19I145. Transl. of Russian abstr.] WR 122: 46

Delvingt, Willy, and Gerard Bastin. DOCUMENTS POUR L'ETUDE DES OISEAUX DE LA VILLE DE BRUXELLES. [DATA ON THE STUDY OF BIRDS OF THE CITY OF BRUSSELS.] Bull. Inst. Agron. Sta. Rech. Gembloux 29(1): 65-70. 1961. [From Biol. Abstr. 46(19), 1965. In French.] WR 122: 47
[Inst. Agron., Gembloux, Belgium.]

Dorst, Jean. ÉTUDE D'UNE COLLECTION D'OISEAUX RAPPORTÉE DE SANDIA PÉROU MÉRIDIONAL. [STUDY OF A COLLECTION OF BIRDS REPORTED FROM THE SANDIA VALLEY OF SOUTHERN PERU.] Bull. Mus. Natl. Hist. Nat. 33(6): 563-570. 1961. [From Biol. Abstr. 46(19), 1965. In French.] WR 122: 47
[Lab. Zool. Mus. Natl. Hist. Nat., Paris, France.]

Garcia-Montana, F., and O. H. Garrido. NUEVOS REGISTROS DE NIDIFICACIÓN DE AVES EN CUBA. [NEW RECORDS OF BIRDS NESTING IN CUBA.] Poeyana Inst. Biol. La Habana Ser. A (9): 1-3. 1965. [From Biol. Abstr. 47(7), 1966. In Spanish with English summ.] WR 122: 47
[Acad. Cienc. Cuba, La Habana, Cuba.] "Sterna dougalli dougalli, Thalasseus sandvicensis acuflavidus and Dendrocygna bicolor."

Garrido, O. H., and F. Garcia-Montana. AVES NUEVAS PARA CUBA. [NEW BIRDS FOR CUBA.] Poeyana Inst. Biol. La Habana Ser. A (10): 1-6. 1965. [From Biol. Abstr. 47(7), 1966. In Spanish with English summ.] WR 122: 47
[Acad. Cienc. Cuba, La Habana, Cuba.] Fourteen spp. of birds, representing 10 families, are reported as having been collected in Cuba for the first time.

Jackson, E. E. THE BIRDS OF FOULA. Scottish Birds 4(Spec. Suppl.): 1-60, 2 figs., 8 pls. Spring 1966. WR 122: 47
Includes a dozen pages dealing with four of the more important breeding species--fulmar, great skua, Arctic skua and kittiwake--and classified list of all species for which there is a positive record for this small North Atlantic island.

Kartashev, N. N. [A QUANTITATIVE DESCRIPTION OF THE BIRDS IN THE SOLOVETSK ISLANDS.] Ornitologiya (Moscow) 6: 23-36. 1963. [From Biol. Abstr. 46(20), 1965, from Referat. Zhur., Biol., 1964, no. 131172. Transl. of Russian abstr.] WR 122: 47

Lees, S. G. BIRDS IN AND AROUND MARANDELLAS. South African Avifauna Ser. Percy Fitzpatrick Inst. African Ornithol. no. 36. 14 p. 1966. Price 20¢. WR 122: 47

Lévêque, Raymond, Robert I. Bowman, and Stephen L. Billeb. MIGRANTS IN THE GALÁPAGOS AREA. Condor 68(1): 81-101, 6 figs. Jan.-Feb. 1966. WR 122: 47
[10 Chemin des Crêts, Petit Saconnex, 1211 Geneva 19, Switzerland.] Sixty-three species of migrant birds are listed with annotations.

Lippens, L. LES OIXEAUX DE KNOKKE-SUR-MER. [THE BIRDS OF KNOKKE-SUR-MER (NETHERLANDS, BELGIUM).] Gerfaut 53(2): 119-196, illus., map. 1963. [From Biol. Abstr. 47(5), 1966. In French with Flemish summ.] WR 122: 47

Lugovoi, A. E. [THE BIRDS OF THE VOLGA RIVER DELTA.] Trudy Astrakhanskogo Zapovednika 8: 9-185, illus., map. 1963. [From Biol. Abstr. 46(22), 1965, from Referat. Zhur., Biol., 1964, no. 22I179. Transl. of Russian abstr.] WR 122: 47
There are 257 spp. in the bird fauna of the Delta: of these 106 nest there, 129 were seen during migration, arrival, wintering or summering, and 22 were transients. Information is given on the phenology, population size, and distribution of the birds of the natural regions of the Delta.

McEvey, Allan. THE BIRDS OF THE RUTHERGLEN DISTRICT. Emu 65(1): 1-56, 2 figs., 4 pls. Aug. 1965. WR 122: 47
"Victoria, Australia."

Morel, Gérard, and Francis Roux. LES MIGRATEURS PALEARCTIQUES AU SENEGAL. I. NON PASSEREAUX. [THE PALEARCTIC MIGRANTS OF SENEGAL. I. NON-PASSERINE.] Terre & Vie 1966(1): 19-72, 1 fig. Jan.-Mar. 1966. In French. WR 122: 48

Niven, C. K., and P. N. F. Niven. BIRDS OF AMANZI, UITENHAGE DISTRICT, C[APE] P[ROVINCE]. South African Avifauna Ser., Percy Fitzpatrick Inst. African Ornithol. no. 34. 55 p. 1966. Price 50¢. WR 122: 48
Annotated list of birds prefaced with 2 descriptions of habitats.

Olivares, A. NOTAS SOBRE AVES DE LOS ANDES ORIENTALES EN BOYACA. [NOTES ON EASTERN ANDES BIRDS IN BOYACA, COLOMBIA.] Bol. Soc. Venez. Cienc. Nat. 25 (106): 91-125. 1963. [From Biol. Abstr. 47(2), 1966. In Spanish with English summ.] WR 122: 48
[Inst. Cienc. Nat., Univ. Nac. Colombia, Bogota, Columbia.]

Riabinin, Sergiusz. MATERIALY DO FAUNY PTAKOW POLESIA LUBELSKIEGO. [MATERIAL ON THE BIRD FAUNA OF THE LUBLIN-POLESIE.] Ann. Univ. Mariae Curie-Sklodowska Sect. C Biol. 18: 231-248, illus. 1963. [From Biol. Abstr. 47(6), 1966. In Polish with Russian and French summ.] WR 122: 48
[Univ. Mariae Curie-Sklodowska, Lublin, Poland.]

Rising, James D. SUMMER BIRDS FROM CHEROKEE COUNTY, KANSAS. Kans. Ornithol. Soc. Bull. 16(2): 9-14. June 1965. WR 122: 48
[Univ. Kans., Lawrence.]

Skead, David M. A PRELIMINARY CLASSIFICATION FOR BIRD HABITATS FOR THE TRANSVAAL PROVINCE. South African Avifauna Ser., Percy Fitzpatrick Inst. African Ornithol. no. 38. 9 p. 1966. Price 10¢. WR 122: 48

Sladek, Josef. POZNAMKY KU KVALITATIVNEJ CHARAKTERISTIKE AVIFAUNY OKOLIA ZVOLENA. [REMARKS ON THE QUALITATIVE CHARACTERISTICS OF THE AVIFAUNA OF THE ZVOLEN AREA.] Biologia (Bratislava) 20(6): 447-452. 1965. [From Biol. Abstr. 47(6), 1966. In Czech with Russian and German summ.] WR 122: 48
[Vysokej Sk. Lesnicka, Zvolen, Czechoslovakia.]

Storr, G. M. BIRDS OF THE NORTHERN ISLANDS OF THE HOUTMAN ABROLHOS. Emu 65(3): 209-221, 2 figs. Jan. 1966. WR 122: 48
[Western Australian Museum, Perth, Australia.] An annotated list of 54 spp.

Winterbottom, J. M. LIST OF THE BIRDS OF VANRHYNSDORP DISTRICT, C[APE] P[ROVINCE]. South African Avifauna Ser., Percy Fitzpatrick Inst. African Ornithol. no. 35. 18 p. 1966. Price 20¢. WR 122: 48

Winterbottom, J. M. A LIST OF THE BIRDS OF THE RIVERSDALE DISTRICT. South African Avifauna Ser., Percy Fitzpatrick Inst. African Ornithol. no. 37. 16 p. 1966. Price 20¢. WR 122: 48

Winterbottom, J. M. RESULTS OF THE PERCY FITZPATRICK INSTITUTE OF AFRICAN ORNITHOLOGY--WINDHOEK STATE MUSEUM JOINT ORNITHOLOGICAL EXPEDITIONS. 3. THE BIRDS OF THE OKAVANGO VALLEY. Cimbebasia no. 15. 78 p., 2 figs. 1966. WR 122: 48
[Univ. Cape Town, Cape Town, S. Africa.] Listing of 257 spp.

BIRDS--POPULATIONS & FLUCTUATIONS

Danilov, N. N. [CHANGES IN THE ORNITHOFAUNA OF THE AFFORESTED GLADES OF THE MIDDLE URALS.] Zool. Zhur. 37(12): 1898-1903. 1958. [From Biol. Abstr. 47(6), 1966, from Referat. Zhur., Biol., 1959, no. 88858. Transl. of Russian abstr. Original with English summ.] WR 122: 48

Fisher, James. THE FULMAR POPULATION OF BRITAIN AND IRELAND, 1959. Bird Study 13(1): 5-76, 3 figs. Mar. 1966. WR 122: 49
[Ashton, Northampton, England.] "Fulmarus glacialis."

Grant, P. R. THE DENSITY OF LAND BIRDS ON THE TRES MARÍAS ISLANDS IN MEXICO. I. NUMBERS AND BIOMASS. Canadian J. Zool. 44(3): 391-400. May 1966. WR 122: 49
[McGill Univ., Montreal, Quebec.] Abstract: Repeated surveys of the land birds in a 10-ac census area were carried out on María Magdalena and in a comparable mainland area near Tepic. The density of birds is about 35% greater on the island than on the mainland because of the extreme abundance of the two most common species on the island. Island endemics are slightly more abundant than the non-endemics. These two results are partly explicable in terms of the greater ecological opportunity on islands than in mainland regions due to the paucity of species in the former. Standing crop biomass [SCB] of birds per unit area is greater on María Magdalena than on the mainland by about 35%, although the average SCB per individual bird is the same in the two regions. It is suggested that the greater biomass may be due to greater productivity on the island than in an equivalent area of mainland.

Jones, P. Hope. EFFECTS OF CONSECUTIVE, CONTRASTING, WINTERS ON THE BIRD POPULATION OF AN ANGLESEY PINE PLANTATION. Bird Study 13(1): 77-83, 2 figs. Mar. 1966. WR 122: 49
In the plantation studied, the size of the breeding population was probably determined by the number of birds surviving at the end of the previous winter, irrespective of the number of birds present at the beginning of that winter (and therefore presumably irrespective of the breeding success of the previous summer).--From concl. & summ.

Jones, P. Hope. THE BIRD POPULATION SUCCESSION AT NEWBOROUGH WARREN. British Birds 59(5): 180-190. May 1966. WR 122: 49
The breeding and wintering populations of birds in six major habitats on Newborough Warren, Anglesey, were sampled during the period 1962 to 1964. The main aims of the work were to obtain data on species composition, distribution and abundance, and on the change in bird life following afforestation of the duneland.--From summ.

Lamm, D. W., and S. J. Wilson. SEASONAL FLUCTUATIONS OF BIRDS IN THE BRINDIBELLA RANGE, AUSTRALIAN CAPITAL TERRITORY. Emu 65(3): 183-207, 1 fig., 3 pls. Jan. 1966. WR 122: 49
[6722 E. Nasumpta Drive, Tucson, Ariz.]

Lenkhol'd, V. A. [CHANGES IN THE BIRD FAUNA OF KARAGANDA IN THE LAST 20 YEARS.] Trudy Inst. Zool. Akad. Nauk Kaz. SSR 24: 206-210. 1964. [From Biol. Abstr. 46(23), 1965, from Referat. Zhur., Biol., 1964, no. 24I175. Transl. of Russian abstr.] WR 122: 49

Marvin, Philip H. BIRDS ON THE RISE. Bull. Entomol. Soc. Am. 10(3): 194-196. 1964. [From Biol. Abstr. 46(20), 1965.] WR 122: 49
Based on Christmas Bird Counts, National Audubon Society Field Notes, 1949-63, bird populations in the U.S. are increasing in the face of expanding use of insecticides. Thus, the average annual bird count (all species) increased from 8.6 million in 1949-52 to 44.6 million in 1962, about a 5-fold increase during the decade. There was an increased number of observers (5160 in 1949-52 to 9981 in 1962), but a 3-fold increase of birds is believed reliable.

Oliger, T. I. [CHANGES IN THE COMPOSITION OF THE BIRDS OF THE PUSTYNSKII RESTRICTED FOREST FOR THE PERIOD FROM 1936 TO 1962.] Uch. Zap. Gor'kovskogo Univ. 64: 17-18. 1964. [From Biol. Abstr. 46(22), 1965, from Referat. Zhur., Biol., 1964, no. 13I174. In Russian.] WR 122: 49

Poslavskii, A. N. [AN ANALYSIS OF THE BIRD POPULATION OF THE URAL-EMBA INTERFLUVE AS RELATED TO THE REGRESSION OF THE CASPIAN SEA.] Ornitologiya (Moscow) 6: 195-203. 1963. [From Biol. Abstr. 46(20), 1965, from Referat. Zhur., Biol., 1964, no. 15I247. Transl. of Russian abstr.] WR 122: 50

Spangenberg, E. P., and V. V. Leonovich. [INFLUENCE OF HUMAN ACTIVITY ON BIRDS OF THE EASTERN SHORE OF THE WHITE SEA.] Bull. Moscow Obshch. Ispit. Prirody (Biol.) 63(5): 31-36. 1958. [From Biol. Abstr. 47(2), 1966, from Referat. Zhur., Biol., 1959, no. 67545. Transl. of Russian abstr. Original with English summ.] WR 122: 50

Tompa, Frank S. FACTORS DETERMINING THE NUMBERS OF SONG SPARROWS, MELOSPIZA MELODIA (WILSON), ON MANDARTE ISLAND, BRITISH COLUMBIA, CANADA. Acta Zool. Fennica (109): 1-73, illus., map. 1964. [From Biol. Abstr. 47(6), 1966.] WR 122: 50
[Univ. Helsingfors, Helsinki, Finland.]

Zuvanich, J. R., and Merril G. McHenry. COMPARISON OF WATER BIRDS OBSERVED IN KANSAS IN 1955 AND 1963. Trans. Kans. Acad. Sci. 67(1): 169-183, maps. 1964. [From Biol. Abstr. 46(19), 1965.] WR 122: 50

BIRDS--ECONOMICS, CONTROL, MORTALITY

Golovanova, E. N. [THE BIOLOGICAL BASIS AND RESULTS OF USING THE BAITING METHOD FOR THE CONTROL OF SPARROWS.] In: (Problems of ornithology.) L'vovsk. Univ. (L'vov). p. 132-137. 1964. [From Biol. Abstr. 46(20), 1965, from Referat. Zhur., Biol., 1964, no. 23I224. Transl. of Russian abstr.] WR 122: 50

Jordan, Romulo. LAS EMIGRACIONES Y MORTALIDAD DE AVES GUANERAS EN EL OTONO E INVIERNO DE 1963. [MIGRATIONS AND MORTALITY OF GUANO BIRDS IN THE FALL AND WINTER OF 1963.] Inform. Inst. Invest. Recursos Mar. 27: 1-31, illus., maps. 1964. [From Biol. Abstr. 47(8), 1966. In Spanish.] WR 122: 50
At the end of the Southern Hemisphere during the fall and winter of 1963 environmental phenomena occurred that disturbed the ecologic stability of the guano birds in Peru, with records of sudden extraordinary migrations towards places far away from the breeding grounds, remarkable changes in their behavior, and a rather increased mortality rate among the 3 guano-producing spp. and at least 4 other sea birds: Phalacrocorax bougainvillii, Sula variegata, Pelecanus o. thagus; Puffinus griseus and Phalacrocorax gaimardi.

Kawaguchi, Koich, and Ryuzo Marumo. MASS MORTALITY OF SLENDER-BILLED SHEARWATER, PUFFINUS TENUIROSTRIS, IN SURUGA BAY. Misc. Rept. Yamashina Inst. Ornithol. Zool. 4(2): 105-113. 1964. [From Biol. Abstr. 46(23), 1965.] WR 122: 50

Khavanova, M. V. [THE BARN SWALLOW AND THE REDRUMPED SWALLOW AND THEIR ECONOMIC IMPORTANCE.] In: (Information on the conference of young biologists of Kirgiziya.) Akad. Nauk Kirg. SSR (Frunze). p. 113-114. 1963. [From Biol. Abstr. 46(19), 1965, from Referat. Zhur., Biol., 1964, no. 20I215. Transl. of Russian abstr.] WR 122: 50

BIRDS--PARASITES & DISEASES

Blankenship, Lytle H., Raymond E. Reed, and Harold D. Irby. POX IN MOURNING DOVES AND GAMBEL'S QUAIL IN SOUTHERN ARIZONA. J. Wildl. Mgmt. 30(2): 253-257. Apr. 1966. WR 122: 50
[Univ. Ariz., Tucson.] Abstract: Outbreaks of pox-virus infections were noted in mourning doves (Zenaidura macroura) and Gambel's quail (Lophortyx gambelii) in southern Arizona in 1963. Thirty-eight wild mourning doves and 11 Gambel's quail were found to be infected. Diseased birds were encountered

from May through November, but the largest number was handled during October when 19 doves showed signs of the disease. Penned doves also became infected and seven died. Mortality from pox-virus infections in wild populations appeared to be low, although mortality figures might have been higher if all dead doves could have been found and the cause of death diagnosed.

Clark, Glen W. SCHIZOGONY AND GAMETOCYTE DEVELOPMENT OF LEUCOCYTOZOON BERESTNEFFI IN THE YELLOW-BILLED MAGPIE, PICA NUTTALLI. J. Protozool. 12(4): 584-589, illus. 1965. [From Biol. Abstr. 47(7), 1966.] WR 122: 51
[Central Wash. State Coll., Ellensburg.]

Faddoul, George P., Gordon W. Fellows, and James Baird. A SURVEY ON THE INCIDENCE OF SALMONELLAE IN WILD BIRDS. Avian Diseases 10(1): 89-94, 2 figs. Feb. 1966. WR 122: 51
[Univ. Mass., Waltham.] Summary: A Salmonella infection was identified in 12 of the first 100 wild bird consignments submitted during a one-year survey. Eight outbreaks of S. typhimurium infection, in scattered geographical areas, were identified in brown-headed cowbirds. Seven of these outbreaks occurred during the winter months. Our findings suggest that cowbirds may harbor a high incidence of Salmonella, and this revelation merits further investigation. Two outbreaks of S. typhimurium infection were identified in house sparrows, one S. typhimurium infection in a white-throated sparrow, and one S. derby infection in a herring gull.

Kirmse, Peter. NEW WILD BIRD HOSTS FOR POX VIRUSES. Bull. Wildl. Disease Assoc. 2(2): 30-33. Apr. 1966. WR 122: 51
[Ontario Vet. Coll., Guelph, Canada.] Abstract: Pox lesions were described in three new species of wild birds: Swainson's thrush (Hylocichla ustalata), gray-cheeked thrush (Hylocichla minima) and brown creeper (Certhia familiaris). These birds were collected during bird banding activities on Long Point, Ontario.

Locke, L. N., and J. O. Knisley, Jr. SARCOCYSTIS IN A YELLOWTHROAT AND A RUSTY BLACKBIRD. Bull. Wildl. Disease Assoc. 1(3): 36. July 1965. WR 122: 51
[Patuxent Wildl. Res. Center, Laurel, Md.]

Locke, L. N., W. O. Wirtz II, and E. E. Brown. POX INFECTION AND A SECONDARY CUTANEOUS MYCOSIS IN A RED-TAILED TROPICBIRD (PHAETHON RUBRICAUDA). Bull. Wildl. Disease Assoc. 1(4): 60-61. Oct. 1965. WR 122: 51
[Patuxent Wildl. Res. Center, Laurel, Md.]

Marx, D. J. SOME BLOOD PARASITES FROM MINNESOTA AND WISCONSIN BIRDS. Bull. Wildl. Disease Assoc. 2(1): 6-8. Jan. 1966. WR 122: 51
[Univ. Minn., St. Paul.]

GAME BIRDS--GENERAL

Anonymous. [THE GAME BIRDS OF KAZAKHSTAN: FAUNA, ECOLOGY, PRACTICAL IMPORTANCE.] Trudy Inst. Zool. Akad. Nauk Kaz. SSR (Alma-Ata) 24: 1-220, illus. 1964. Price 1 ruble 48 kopecks. [From Biol. Abstr. 46(22), 1965, from Referat. Zhur., Biol., 1964, no. 21I274K. In Russian.] WR 122: 51

Danilov, N. N. [RECORDING THE STOCKS OF GALLINACEOUS GAME BIRDS.] In: (The organization and counting methods for birds and harmful rodents.) Akad. Nauk SSSR (Moscow). p. 28-35, maps. 1963. [From Biol. Abstr. 46(20), 1965, from Referat. Zhur., Biol., 1964, no. 16I192. Transl. of Russian abstr.] WR 122: 51

Hardy, Joe W. VARIOUS TECHNIQUES OF EVALUATING EXOTIC GAME BIRD RELEASES. Proc. 17th Ann. Conf. SE Assoc. Game & Fish Comms. p. 108-111. 1963 [1965]. WR 122: 51

Keeler, James E. STATUS OF THE RED JUNGLEFOWL IN THE SOUTHEASTERN STATES. Proc. 17th Ann. Conf. SE Assoc. Game & Fish Comms. p. 107-108. 1963 [1965]. WR 122: 52
[Ala. Dept. Conserv., Montgomery.]

Salter, S. H. A NOTE ON THE RECORDING OF EGG ACTIVITY. Animal Behaviour 14(1): 41-43, 4 figs. + 1 pl. Jan. 1966. WR 122: 52
[Cambridge Psychol. Lab., Cambridge, England.] The technique was developed in order to record activity in eggs in connection with problems arising from the synchronization of hatching in game birds (Vince [WR 116: 52]). Sensitive measurements of activity can be made while leaving the egg intact and the technique is one which could be used with other organisms.

Sevast'tanov, G. N. [THE FEEDING OF BIRDS.] Izvest. Vysshykh Uchebnykh Zavedenii Lesnoi Zhur. 2: 43-47. 1962. [From Biol. Abstr. 47(1), 1966, from Referat. Zhur., Biol., 1963, no. 3I190. Transl. of Russian abstr.] WR 122: 52
Studies of woodcock, red grouse, and hazel grouse during 1957, 1958, and 1960.

Stonehouse, Bernard. EGG VOLUMES FROM LINEAR DIMENSIONS. Emu 65(3): 227-228. Jan. 1966. WR 122: 52
[Canterbury Univ., Christchurch, New Zealand.]

Yurgenson, P. B. [THE RESULTS OF THE ARTIFICIAL SETTLEMENT OF WILD BIRDS AS A METHOD OF RESTORATION ON HUNTING TRACTS.] In: (Problems of ornithology.) L'vovsk. Univ. (L'vov). p. 92-95. 1964. [From Biol. Abstr. 46(19), 1965, from Referat. Zhur., Biol., 1964, no. 21I281. Transl. of Russian abstr.] WR 122: 52

QUAIL

Bigland, C. H., A. J. DaMassa, and A. E. Woodard. DISEASES OF JAPANESE QUAIL (COTURNIX COTURNIX JAPONICA)--A FLOCK SURVEY AND EXPERIMENTAL TRANSMISSION OF SELECTED AVIAN PATHOGENS. Avian Diseases 9(2): 212-219, 1 fig. Feb. 1965. WR 122: 52
[Univ. Saskatchewan, Saskatoon, Canada.]

Carter, Ellis A. EVALUATION OF MANAGEMENT TECHNIQUES BY MEANS OF A THREE-YEAR QUAIL CENSUS. Proc. 16th Ann. Conf. SE Assoc. Game & Fish Comms. p. 137-140. 1962 [1965]. WR 122: 52

Cundy, K. R. SUSCEPTIBILITY OF JAPANESE QUAIL (COTURNIX COTURNIX JAPONICA) TO EXPERIMENTAL INFECTION WITH HAEMOPHILUS GALLINARUM. Avian Diseases 9(2): 272-284, 2 figs. Feb. 1965. WR 122: 52
[Univ. Calif., Davis.]

Howes, J. R. ENVIRONMENTAL FACTORS AFFECTING OVULATION IN THE COTURNIX QUAIL. J. Ala. Acad. Sci. 35(1): 20-21. 1964. [From Biol. Abstr. 46(23), 1965.] WR 122: 52
[Auburn Univ., Auburn, Ala.]

Jackson, A. S. A PATTERN TO POPULATION OSCILLATIONS OF THE BOBWHITE QUAIL IN THE LOWER PLAINS GRAZING RANGES OF NORTHWEST TEXAS. Proc. 16th Ann. Conf. SE Assoc. Game & Fish Comms. p. 120-126, 1 fig. 1962 [1965]. WR 122: 52
"In summary, the interactions of drouth, range depletion, and subsequent heavy rainfall from time to time converts vast acreages of marginal mesquite brush range to quail habitat in the Lower Plains. This is an ephemeral phase which emphasizes the need to harvest heavily the resulting bonus crop of bobwhites if it is not to be wasted. Neither the quail, nor the weather and plant successions responsible are likely to last more than a year or two."

Kuchin, A. P. [THE BIOLOGY OF THE QUAIL IN THE UPPER OB' RIVER AREA.] Izv. Altaiskogo Otd. Geogr. Obshch. SSSR 3: 70-71. 1963. [From Biol. Abstr. 46(22), 1965, from Referat. Zhur., Biol., 1964, no. 16I200. Transl. of Russian abstr.] WR 122: 53

Levy, Seymour H., John J. Levy, and Richard A. Bishop. USE OF TAPE RECORDED FEMALE QUAIL CALLS DURING THE BREEDING SEASON. J. Wildl. Mgmt. 30(2): 426-428, 1 fig. Apr. 1966. WR 122: 53

[Tucson, Ariz.] Abstract: Male harlequin quail (Cyrtonyx montezumae mearnsi) in breeding condition responded readily to tape recorded female calls. Recorded calls were more useful in locating males than were live decoy females, which could not be depended upon to call regularly. Similar results were obtained with Gambel's quail (Lophortyx gambelii) and scaled quail (Callipepla squamata). The degree of response to the recorded female calls is expressed graphically for two of the three species studied.

Stephens, Chester H. COTURNIX QUAIL INVESTIGATIONS IN KENTUCKY. Proc. 16th Ann. Conf. SE Assoc. Game & Fish Comms. p. 126-137, [2 figs.]. 1962 [1965]. WR 122: 53

[Ky. Dept. Fish & Wildl. Resources, Frankfort.] A thirty-eight month study of the survival rates and influencing factors affecting released pen-reared Japanese coturnix quail indicated that a permanent establishment of this subspecies in Ky. was not possible. Future introductions are not recommended.--From summ. & concl.

PHEASANTS

Faddoul, George P., and Gordon W. Fellows. CLINICAL MANIFESTATIONS OF EASTERN EQUINE ENCEPHALOMYELITIS IN PHEASANTS. Avian Diseases 9(4): 530-535. Nov. 1965. WR 122: 53

[Univ. Mass., Waltham.] Summary: Clinical and epidemiological aspects of 28 natural outbreaks of EEE infection in pheasants that occurred in Massachusetts during the past 10 calendar years are presented. The numerical incidence of EEE infection in pheasants reached epizootic proportions in 1956 (24 confirmed outbreaks, greater than in any year on record in Massachusetts). Twenty-four (85.7%) of the total number of EEE outbreaks in pheasants were encountered during August and September. The confirmed isolation of WEE virus from a 3-year-old Impeyan pheasant was the first recorded demonstration of a natural infection in the pheasant in Massachusetts.

Fedyanina, T. V. [THE PRESENT POPULATION SIZE AND DISTRIBUTION OF PHEASANTS IN KIRGIZIYA.] In: (Information on the Conference of Young Biologists of Kirgiziya.) Akad. Nauk Kirg. SSR (Frunze). p. 111-112. 1963. [From Biol. Abstr. 46(20), 1965, from Referat. Zhur., Biol., 1964, no. 16I207. Transl. of Russian abstr.] WR 122: 53

Jovič, Vladislava. PRILOG POZNAVANJU REPRODUKCIJE FAZANA U VEŠTAČKOM ODGAJIVANJU. [CONTRIBUTION TO THE KNOWLEDGE OF PHEASANT REPRODUCTION IN ARTIFICIAL BREEDING.] Jelen 1: 103-131, 10 figs. 1964. In Serbo-Croatian with Russian and English summ. WR 122: 53

Kessler, Francis W. AVIAN PREDATION ON PHEASANTS WEARING DIFFERENTLY COLORED PLASTIC MARKERS. Ohio J. Sci. 64(6): 401-402. 1964. [From Biol. Abstr. 46(20), 1965.] WR 122: 53

[Ohio State Univ., Columbus.]

Kopischke, Earl D. SELECTION OF CALCIUM- AND MAGNESIUM-BEARING GRIT BY PHEASANTS IN MINNESOTA. J. Wildl. Mgmt. 30(2): 276-279, 1 fig. Apr. 1966. WR 122: 54

[Minn. Dept. Conserv., Madelia.] Abstract: Gizzard grit (490 samples) from adult pheasants (Phasianus colchicus) collected throughout the year and from juveniles collected between December 1 and the onset of the next breeding season in south-central Minnesota was analyzed for calcium and magnesium. Wild hen pheasants evidently are capable of selecting calcareous (calcium-bearing) grit over noncalcareous grit. Ingestion of calcareous grit by hen pheasants is much greater during the egg-laying period than at any other time; these results confirm those of earlier studies. The magnesium content of grit ingested shows a seasonal trend similar to that for calcium although magnesium is ingested in considerably lower quantities. No trend was found in the ingestion of calcium and magnesium by cock pheasants, suggesting that their requirements for these elements do not vary appreciably during the year.

Kopischke, Earl D., and Maynard M. Nelson. GRIT AVAILABILITY AND PHEASANT DENSITIES IN MINNESOTA AND SOUTH DAKOTA. J. Wildl. Mgmt. 30(2): 269-275, 1 fig. Apr. 1966. WR 122: 54

[Minn. Dept. Conserv., Madelia.] Abstract: Among 137 hen pheasants (Phasianus colchicus) collected by shooting during May and June, 1963, in four areas representing different gradients of pheasant abundance in Minnesota and South Dakota, no significant difference was found between areas in the quantity of grit consumed by laying hen pheasants nor in the relative calcium and magnesium content of this grit. Laying hens from all areas consumed about 50 percent more grit by weight than did nonlaying hens. The mean number of eggs laid per hen by mid-June did not differ significantly between areas at the 5 percent level. Grit of the size commonly used by hen pheasants was abundant on secondary roads in each area but was comparatively scarce in field soils of the loess soil area. There was more calcium and magnesium in the grit from roads in southeast Minnesota than in grit from the other areas because crushed limestone is used on roads in this area; glacial gravel is used in the other areas. Grit from fields of the loess soil area was comparatively high in calcium and magnesium, apparently because liming is practiced in this area. Pheasants can selectively pick calcium- and magnesium-bearing grit and differences in availability of these elements in the grit is believed not to limit pheasant densities in the areas studied.

Kulyukina, N. M. [THE PRESENT PHEASANT POPULATION SIZE IN THE VOLGA DELTA.] Trudy Astrakhanskogo Zapovednika 8: 231-234. 1963. [From Biol. Abstr. 47(1), 1966, from Referat. Zhur., Biol., 1964, no. 21I168. Transl. of Russian abstr.] WR 122: 54

Nelson, Lee K. INTRODUCTIONS OF THE BLACKNECK PHEASANT GROUP AND CROSSES INTO THE SOUTHEASTERN STATES. Proc. 17th Ann. Conf. SE Assoc. Game & Fish Comms. p. 111-119. 1963 [1965]. WR 122: 54

[Ky. Dept. Fish & Wildl. Resources, Frankfort.]

Nelson, Maynard M., John B. Moyle, and Albert T. Farnham. COBALT LEVELS IN FOODS AND LIVERS OF PHEASANTS. J. Wildl. Mgmt. 30(2): 423-425. Apr. 1966. WR 122: 54

[Minn. Dept. Conserv., Madelia.] Abstract: From 83 cobalt analyses of four foods of pheasant (Phasianus colchicus)--corn, rose hips (Rosa spp.), foxtail (Setaria spp.) seeds, and ragweed (Ambrosia spp.)--and from analyses of 95 pheasant livers it is concluded that cobalt is not a limiting nutritional factor for pheasants in southern Minnesota. Average concentrations of cobalt in ppm were: corn, 0.040; rose hips, 0.069; foxtail, 0.084; ragweed, 0.228; and pheasant livers, 0.23. Concentration of cobalt in foods varied considerably locally and there was no statistically provable difference in concentrations in the four foods or in the livers from glaciated and nonglaciated areas. No seasonal trend in cobalt concentrations in the livers was noted.

Rosen, Merton N., Brian F. Hunter, and Oscar A. Brunetti. PRELIMINARY STUDY OF AN INFECTIOUS HEPATITIS IN PHEASANTS. Avian Diseases 9(3): 382-393, 4 figs. Aug. 1965. WR 122: 55

[Calif. Dept. Fish & Game, Sacramento.] Summary: A highly infectious pheasant disease, previously unreported, occurred in California during 1963 and 1964. The mortality ranged from 40 to 95% in pheasant chicks between five and ten days of age. The salient pathological features were a hypertrophied liver with congestion and focal necrosis; catarrhal enteritis in many and post-mortem ocular opacity in a few chicks. An inclusion-like body was observed in the hepatic parenchymal cells. Attempts to induce pathology in embryos and tissue cultures with filtrates of liver suspension failed. Ducklings, turkey poults, chicken chicks, chukar partridges, and newborn Swiss mice were refractory to infection, but pheasants uniformly succumbed to injection of filtrates as well as to direct contact. The chukar partridge was incriminated as a carrier of the disease. Antibiotics, sulfonamides, and attempts to induce immunity with sera from contact birds as a means of controlling the disease gave negative results. There are indications that this is a specific viral hepatitis of pheasants.

Seibert, Henri C., and Robert W. Donohoe. THE HISTORY OF THE REEVES PHEASANT PROGRAM IN OHIO. Ohio Game Monographs no. 1. iv + 20 p., 12 figs. Dec. 1965. WR 122: 55

[Ohio Univ., Athens.] Abstract: A total of 21,735 Reeves pheasants (Syrmaticus reevesii) were reared and released in the deciduous forestland of southeastern Ohio between 1954 and 1961. The Reeves program revealed: (1) Reeves can be artificially propagated in large numbers; (2) Reeves are relatively sedentary, tending to remain at or within 5 miles of their release site, but can travel up to 20 miles and cross large rivers; (3) Reeves have some potential to survive southeast Ohio winters; (4) 37 broods and/or nests were reported in localities where birds had been released the previous fall; (5) Reeves eat a variety of fruits, grains, grasses, and insects, which do not indicate a characteristically woodland habitat. The potential of this bird as an addition to the game species in the state was never realized during this program. A hunting season, proposed after the 1961 releases, never materialized because there was not enough evidence that huntable populations of Reeves existed in any of the release areas.

Shatas, Ya. F. [THE PHEASANT OF THE VOLGA DELTA AND FACTORS DETERMINING ITS POPULATION DYNAMICS.] Trudy Astrakhanskogo Zapovednika 8: 187-230. 1963. [From Biol. Abstr. 46(22), 1965, from Referat. Zhur., Biol., 1964, no. 16I206. Transl. of Russian abstr.] WR 122: 55

Tuttle, H. J. THE JAPANESE GREEN AND KALIJ PHEASANTS IN VIRGINIA. Proc. 17th Ann. Conf. SE Assoc. Game & Fish Comms. p. 121-123. 1963 [1965]. WR 122: 55

[Va. Comm. Game & Inland Fisheries, Richmond.]

Tyurekhodzhaev, Zh. M. [BREEDING OF PHASIANUS COLCHICUS TURCESTANICUS.] Trudy Inst. Zool. Akad. Nauk Kaz. SSR 24: 83-89. 1964. [From Biol. Abstr. 47 (1), 1966, from Referat. Zhur., Biol., 1965, no. 1I143. Transl. of Russian abstr.] WR 122: 55

Webb, Robert. EMERGENCY PHEASANT MANAGEMENT PROGRAM. Land Forest Wildlife 8(1): 11-15, illus. Spring 1965. WR 122: 55

Large storm losses combined with subsequent extreme weather and snow conditions to create the need in some areas for an immediate program of temporary food provision and a complementary measure to restrict harassment by avian predators.

Besadny, C. D. HUNS ON THE MOVE. Wis. Conserv. Bull. 30(6): 21-23, illus. Nov.-Dec. 1965. WR 122: 56
Range extension for the Hungarian partridge in Wisconsin has virtually ceased after a history of expansion for about half a century. Recently there has been a shift in the high density center from the SE counties to the east-central tier of counties.

Collaguado, Mariano. CRIA ARTIFICIAL DE LA PERDIZ ROJA. [ARTIFICIAL BREEDING OF THE RED-LEGGED PARTRIDGE (ALECTORIS RUFA).] Montes 21(123): 223-227, illus. 1965. [From Biol. Abstr. 47(4), 1966. In Spanish.] WR 122: 56

Dolbik, M. S. [AN EXPERIMENTAL STUDY OF THE BEHAVIOR OF THE BLACK GROUSE DURING BROODING.] In: (Problems of ornithology.) L'vovsk. Univ. (L'vov). p. 101-104. 1964. [From Biol. Abstr. 46(19), 1965, from Referat. Zhur., Biol., 1964, no. 21I171. Transl. of Russian abstr.] WR 122: 56

Kobriger, Gerald. REFINEMENT OF THE SHARPTAIL CENSUS IN NORTH DAKOTA. N. Dak. Outdoors 28(9): 1-4, illus. Mar. 1966. WR 122: 56
Comparisons are made between the random ground count method and the census area technique.

Korenberg, E. I., and V. I. Kuznetsov. [ESTIMATING THE NUMBER OF GROUSE BY RECORDING THE NUMBER ENCOUNTERED.] Ornitologiya (Moscow) 6: 387-393. 1963. [From Biol. Abstr. 46(20), 1965, from Referat. Zhur., Biol., 1964, no. 19I144. Transl. of Russian abstr.] WR 122: 56

Lumsden, Harry G. THE PRAIRIE CHICKEN IN SOUTHWESTERN ONTARIO. Canadian Field-Nat. 80(1): 33-45, 2 figs. Jan.-Mar. 1966. WR 122: 56
[Ontario Dept. Lands & Forests, Maple, Ontario.] An account of the extirpation of the prairie chicken in SW Ontario.

Murry, Robert E. THE BLACK FRANCOLIN. Proc. 17th Ann. Conf. SE Assoc. Game & Fish Comms. p. 117, 120-121. 1963 [1965]. WR 122: 56
[La. Wild Life & Fisheries Comm., Baton Rouge.]

Nikul'tsev, A. P. [THE EFFECT OF SOME ENVIRONMENTAL FACTORS ON THE SIZE OF THE BLACK GROUSE POPULATION.] Trudy Vses. Nauch.-Issled. Inst. Zhivotn. Syr'ya Pushniny 20: 134-156. 1963. [From Biol. Abstr. 46(22), 1965, from Referat. Zhur., Biol., 1964, no. 16I198. Transl. of Russian abstr.] WR 122: 56

Ranck, F. M., Jr., J. H. Gainer, J. E. Hanley, and S. L. Nelson. NATURAL OUTBREAK OF EASTERN AND WESTERN ENCEPHALITIS IN PEN-RAISED CHUKARS IN FLORIDA. Avian Diseases 9(1): 8-20, 3 figs. Feb. 1965. WR 122: 56
[Poultry Disease Diagnostic Lab., Callahan, Fla.]

Romanov, A. N. [A STUDY OF THE MIGRATION AND ESTIMATE OF THE POPULATION SIZE OF TETRAONIDAE ON COMMERCIAL HUNTING RANGES OF THE TAIGA ZONE.] In: (Problems of ornithology.) L'vovsk. Univ. (L'vov). p. 96-100. 1964. [From Biol. Abstr. 46(19), 1965, from Referat. Zhur., Biol., 1964, no. 21I275. Transl. of Russian abstr.] WR 122: 56

Rusakov, O. S. [THE NUMBER, NUTRITION, AND DISTRIBUTION OF GROUSE IN LENINGRAD OBLAST.] Sbornik Nauch. Statei Zapadn. Otd. Vses. Nauch.-Issled. Inst. Zhivotn. Syr'ya Pushniny 2: 164-194. 1963. [From Biol. Abstr. 46(22), 1965, from Referat. Zhur., Biol., 1964, no. 16I194. Transl. of Russian abstr.] WR 122: 56

Snoeyenbos, G. H. TUBERCULOSIS IN A RUFFED GROUSE. Bull. Wildl. Disease Assoc. 2(1): 9. Jan. 1966. WR 122: 56
[Univ. Mass., Amherst.]

Watson, Adam. RESEARCH ON SCOTTISH PTARMIGAN. Scottish Birds 3(7): 331-349, 3 figs. Autumn 1965. WR 122: 57

[Marischal Coll., Aberdeen, Scotland.] A summary of an Aberdeenshire population study and a ptarmigan distribution survey in Scotland. Population densities in Scotland, Iceland and the Arctic are compared.

Weber, Andrew J., and Frank B. Barick. ELEVEN YEARS OF RUFFED GROUSE CENSUSING IN WESTERN NORTH CAROLINA. Proc. 17th Ann. Conf. SE Assoc. Game & Fish Comms. p. 13-15. 1963 [1965]. WR 122: 57

[N. C. Wildl. Resources Comm., Raleigh.] "It is concluded that cyclic phenomena or regular oscillations, as described in the literature and characteristic of grouse populations in northern latitudes, were not a characteristic of the Flat Top Wildlife Management Area grouse population during the period 1952-62."

Westerskov, Kaj. WINTER FOOD AND FEEDING HABITS OF THE PARTRIDGE (PERDIX PERDIX) IN THE CANADIAN PRAIRIE. Canadian J. Zool. 44(2): 303-322, 3 figs. + 2 figs. on 2 pls. Mar. 1966. WR 122: 57

[Dept. Internal Affairs, Wellington, New Zealand.] Abstract: From original plantings in Alberta in 1908 and 1909, partridges have spread throughout the Canadian prairie belt and into adjoining parts of the United States, in spite of rigorous winters experienced in the new habitat. At least part of the explanation of this remarkable success in acclimatization lies in a major change in choice of food coupled with abundance of preferred foods in the prairies. In winter, partridges in Europe feed mainly on green foliage, but in the Canadian prairie hardly any green is eaten. Instead, waste grain and weed seeds, both rich in protein, form the diet, amounting to 69 and 25% respectively. Of total winter food, oats make up 27%, barley 23%, and wheat 19%. Seeds from 23 species of weeds are eaten, but three species (Galeopsis tetrahit, Polygonum convolvolus, and Chenopodium album) make up two-thirds of this part of their diet. During winter, partridges feed throughout the day, less vigorously on cold mornings. The biggest crop examined weighed 25 g and contained 412 grains of barley. During extreme cold, partridges consume 50-75 g of grain/weed seeds per day, corresponding to 12 to 18% of their body weight. This is two to three times their daily food consumption during the summer.

TURKEY

Lewis, John B. HYBRIDIZATION BETWEEN WILD AND DOMESTIC TURKEYS IN MISSOURI. J. Wildl. Mgmt. 30(2): 431-432. Apr. 1966. WR 122: 57

[Mo. Dept. Conserv., Columbia.] Abstract: Yearling wild turkey gobblers (Meleagris gallopavo silvestris) killed during the spring turkey seasons of 1963 to 1965 inclusive in Missouri were examined for evidence of hybridization with domestic turkeys (M. g. gallopavo). Based on the extent of replacement of juvenile primaries and rectrices, 27 percent of the birds examined were hybrids. Results show that if established criteria for distinguishing hybrids are valid, self-maintaining hybrid populations exist.

Powell, James A. FLORIDA WILD TURKEY MOVEMENT AND LONGEVITY AS DETERMINED BY BAND RETURNS. Proc. 17th Ann. Conf. SE Assoc. Game & Fish Comms. p. 16-20. 1963 [1965]. WR 122: 57

[Fla. Game & Fresh Water Fish Comm., Tallahassee.]

DOVES & PIGEONS

Ennis, Thomas. THE ARRIVAL AND SPREAD OF THE COLLARED DOVE (STREPTOPELIA DECAOCTO) IN NORTHERN IRELAND. Irish Nat. J. 15(3): 63-67, map. 1965. [From Biol. Abstr. 47(3), 1966.] WR 122: 57

[45 Park Drive, Hollywood, Northern Ireland.]

Faddoul, George P., and Gordon W. Fellows. CLINICAL MANIFESTATIONS OF PARATYPHOID INFECTION IN PIGEONS. Avian Diseases 9(3): 377-381, 1 fig. Aug. 1965. WR 122: 58
[Univ. Mass., Waltham.]

Murton, Ronald Keir. NATURAL AND ARTIFICIAL POPULATION CONTROL IN THE WOOD-PIGEON. THE THIRD BARNES MEMORIAL LECTURE. Ann. Appl. Biol. 55(2): 177-192, illus. 1965. [From Biol. Abstr. 46(22), 1965.] WR 122: 58
[Min. Agr., Fisheries & Food Infestation Control Lab., Worplesdon, Surrey, England.]

Stern, Herbert, Jr., W. Scott Overton, Lawrence Soileau, and Eugene Legler, Jr. RESULTS OF DESIGN TESTS OF METHODS OF ESTIMATING DOVE HARVEST. Proc. 16th Ann. Conf. SE Assoc. Game & Fish Comms. p. 85-103. 1962 [1965]. WR 122: 58
In summary, the use of telephone and field sampling frames in estimating kill and hunting pressure of mourning doves...was very satisfactory in the tests conducted in Tenn. and La. in 1960. There still remain several problems that must be solved before a perfected sampling scheme is available, but it is indicated that the present designs are operationally feasible. Details of operational schemes will vary depending on items of interest and the area surveyed. Certainly, if a reliable kill estimate is necessary in management work, then serious thought should be given to continuing this study over state-wide areas. The results of the present study have already been used in designing a statewide telephone survey in Tenn., which survey is now in the stage of tabulation and analysis. An extensive application of the field sampling frame is in order, although certain associated problems should receive intensive study.--From discussion & conclusions.

Stern, Herbert, Jr., and Larry Soileau. TELEPHONE DOVE HARVEST SURVEY. La. Conservationist 18(1&2): 16, 1 fig. Jan.-Feb. 1966. WR 122: 58
An estimated total of 944,400 doves were killed in La. during the 1964-65 season.

Toepfer, E. W., L. N. Locke, and L. H. Blankenship. THE OCCURRENCE OF TRICHOMONAS GALLINAE IN WHITE-WINGED DOVES IN ARIZONA. Bull. Wildl. Disease Assoc. 2(1): 13. Jan. 1966. WR 122: 58
[Locke: Patuxent Wildl. Res. Center, Laurel, Md.]

WATERFOWL

Ardamatskaya, T. B. [THE RED-BREASTED MERGANSER IN THE AREA NORTHWEST OF THE BLACK SEA.] Ornitologiya (Moscow) 6: 293-302. 1963. [From Biol. Abstr. 46(20), 1965, from Referat. Zhur., Biol., 1964, no. 19I188. Transl. of Russian abstr.] WR 122: 58

Bardwell, John L., Leslie L. Glasgow, and Ernest A. Epps, Jr. NUTRITIONAL ANALYSES OF FOODS EATEN BY PINTAIL AND TEAL IN SOUTH LOUISIANA. Proc. 16th Ann. Conf. SE Assoc. Game & Fish Comms. p. 209-217. 1962 [1965]. WR 122: 58
[La. State Univ., Baton Rouge.]

Barstow, Calvin J. WATERFOWL MANAGEMENT ON TWO U.S. ARMY CORPS OF ENGINEERS MULTIPLE PURPOSE RESERVOIRS IN MIDDLE TENNESSEE. Proc. 17th Ann. Conf. SE Assoc. Game & Fish Comms. p. 50-60, 2 figs. 1963 [1965]. WR 122: 58
[Tenn. Game & Fish Comm., Nashville.] Management has consisted basically of the formation of refuges, development of suitable agricultural waterfowl foods, construction and operation of water control facilities (subimpoundments) and provision of limited hunter controls. A system of 24 small seasonal subimpoundments, varying in size from 6-200 surface acres, was established after initial trials of intensive planting of upland dry feeding sites proved of poor

value in attracting and holding waterfowl. The average construction costs per surface acre of subimpoundment were $25.00 on Cheatham and $31.00 on Old Hickory. Following initiation of subimpounding, duck populations increased significantly (especially during period of the average gun season), concentrated earlier and better utilized the total project areas. Average annual fall and winter usage increased 73% (93% during average gun season) on Cheatham. These buildups have occurred during the years of generally low or declining state and flyway populations.--From summ.

Beckley, Oliver E. WOOD DUCK NESTING BOX PROGRAM. TEN-YEAR REPORT. Conn. Wildl. Consery. Bull. 11(1): 1, 6. Jan.-Feb. 1965. WR 122: 59

Four hundred twenty-five of the 1247 boxes erected were destroyed. It was estimated that 37,500 ducklings were produced from department-erected boxes during the nesting seasons 1953-1962.

Boase, Henry. SHELDUCK BROODS IN THE TAY ESTUARY. British Birds 58(5): 175-179. May 1965. WR 122: 59

Summary: This paper on shelducks Tadorna tadorna in the Tay Estuary, Scotland, deals with the early establishment of a feeding territory; the attendance of adults on broods or packs; the feeding routine and rest period; the aggressive behaviour of caretaker adults and territory holders; and the late association of adults and fledged young. Consideration of the dates and counts of 84 broods indicates that the peak period for their arrival on the Tay mud-flats is 10th-12th June and that the average number of young in a brood there is seven. A pack is taken as consisting of at least twenty young and the earliest date recorded at Kingoodie was 16th June.

Chamberlain, E. B., and C. F. Kaczynski. PROBLEMS IN AERIAL SURVEYS OF WATERFOWL IN EASTERN CANADA. US F&WS, Spec. Sci. Rept.--Wildl. no. 93. iii + 21 p., 5 figs. Nov. 1965. WR 122: 59

[Migratory Bird Populations Sta., Laurel, Md.] Abstract: Experimental surveys of waterfowl breeding populations in eastern Canada have been conducted intermittently since 1949 to develop a procedure for making reliable estimates of breeding populations and production of black ducks and Canada geese in this region. This report reviews in detail the black duck breeding population surveys. The vastness of the breeding range precludes complete coverage; even the amount of sampling required for sound predictions is a major consideration. Several approaches to stratified sampling failed to produce a useful plan. Variations in phenology within the survey area appear to be a major factor in developing a reliable sampling plan; a method that takes these variations into account is presented. Analysis of data from 4 years gave trends in breeding population size that agreed generally with trends in corresponding winter population data; previous interpretation methods did not produce this agreement.

Cohen, Robert Roy. SOME ASPECTS OF ERYTHROPOIETIC AND CIRCULATORY RESPONSE TO CHRONIC DECOMPRESSION HYPOXIA IN THE PINTAIL DUCK (ANAS ACUTA). Ph.D. thesis, Univ. Colo. 187 p. 1965. [From Dissertation Abstr. 26(10), 1966.] WR 122: 59

Although the erythropoietic response to hypoxia appears to be basically similar in birds and mammals, the lower vertebrates appear to lack this sensitive mechanism for the control of erythropoiesis. The suggested greater efficiency of birds, as compared to mammals, in acclimation to hypoxia correlates with the more efficient avian systems of ventilation, circulation, and oxygen transport.

Cowardin, Lewis Mileston. FLOODED TIMBER AS WATERFOWL HABITAT AT THE MONTEZUMA NATIONAL WILDLIFE REFUGE. Ph.D. thesis, Cornell Univ. 132 p. 1965. [From Dissertation Abstr. 26(9), 1966.] WR 122: 59

This study has shown that under the conditions present at Montezuma dead flooded timber is valuable waterfowl habitat. Large quantities of invertebrates are present in the abundant duckweed. The invertebrates and the duckweed itself are important waterfowl foods. Fallen logs are very important because they

furnish loafing spots. Stumps and dead snags furnish abundant nest sites for black ducks and mallards that normally do not nest over water. Lack of cover in the timbered pools is the main factor limiting waterfowl use, especially brood use. Detailed management recommendations for the flooded timber areas at Montezuma and for other similar areas are presented.

Cutten, Felicity E. A. CLUTCH-SIZE AND EGG DIMENSIONS OF THE BLACK SWAN CYGNUS ATRATUS AT LAKE ELLESMERE, CANTERBURY, NEW ZEALAND. Emu 65(3): 223-225, 1 fig. Jan. 1966. WR 122: 60
[Canterbury Univ., Christchurch, New Zealand.]

Eaton, Randall L. PROTECTING METAL WOOD DUCK HOUSES FROM RACCOONS. J. Wildl. Mgmt. 30(2): 428-430, 1 fig. Apr. 1966. WR 122: 60
[Univ. Wash., Seattle.] Abstract: Raccoons (Procyon lotor) enter metal wood duck (Aix sponsa) houses by coming down over the top of the conical roof and entering in an upside-down position. An increase in the height of the conical roof beyond 15 inches does not hinder but aids raccoon entry. Added length of 12 inches between the 24-inch body of the house and the conical roof prevents raccoons under 10 pounds from entering. When this is combined with a 3-inch overlapping conical roof, raccoons of all sizes are prevented from reaching the entrance. Because raccoons use the bottom plate rim to enter a house, this should be replaced with a circular wood base.

Ganyushkin, M. A., and A. E. Lugovoi. [EXPERIENCE IN BANDING MOLTING DUCKS IN THE ASTRAKHAN PRESERVE.] Trudy Astrakhanskogo Zapovednika 8: 393-399, illus. 1963. [From Biol. Abstr. 46(22), 1965, from Referat. Zhur., Biol., 1964, no. 17I119. Transl. of Russian abstr.] WR 122: 60
A device developed at the Astrakhan Preserve for the rapid mass banding of molting aquatic birds is described. There are also some remarks on catching the birds.

Gavrin, V. F. [THE ECOLOGY OF THE PINTAIL DUCK IN KAZAKHSTAN.] Trudy Inst. Zool. Akad. Nauk Kaz. SSR 24: 5-58. 1964. [From Biol. Abstr. 47(1), 1966, from Referat. Zhur., Biol., 1964, no. 24I203. Transl. of Russian abstr.] WR 122: 60

Glasgow, Leslie L., and John L. Bardwell. PINTAIL AND TEAL FOODS IN SOUTH LOUISIANA. Proc. 16th Ann. Conf. SE Assoc. Game & Fish Comms. p. 175-184. 1962 [1965]. WR 122: 60
[La. State Univ., Baton Rouge.] Most previous waterfowl food-habits studies indicate that the sedge family is the most important contributor to duck diets on the Gulf Coast. Results of this study show that in the area sampled, the grass family is far more important than the sedge family, providing about 95% of the pintail food and 90% of the teal food. The sedge family was unimportant to pintails and was of minor importance to teals. The differences in importance of the grass and sedge family as shown by the studies, may be due to several factors. Of primary importance, is the use of gizzards vs. gullets for food-habits studies. Hard seeds tend to be retained in the gizzard and are therefore present in greater proportion to softer seed than the ratio in which both were ingested. Another major reason may be that foods available to waterfowl have changed because of plant succession. It is well known that the marshes of south Louisiana have been subjected to much drainage. This would tend to permit plants to move toward climax and grasses are farther advanced in succession than sedges.--From discussion.

Gritman, R. B., and W. I. Jensen. AVIAN CHOLERA IN A TRUMPETER SWAN (OLOR BUCCINATOR). Bull. Wildl. Disease Assoc. 1(4): 54-55. Oct. 1965. WR 122: 60
[Bear River Res. Sta., Brigham City, Utah.]

Hall, David L. FOOD UTILIZATION BY WATERFOWL IN GREEN TIMBER RESERVOIRS AT NOXUBEE NATIONAL WILDLIFE REFUGE. Proc. 16th Ann. Conf. SE Assoc. Game & Fish Comms. p. 184-199, 4 figs. 1962 [1965]. WR 122: 60

Hankla, Donald J., and Parker B. Smith. WOOD DUCK TRAPPING TECHNIQUES. Proc. 17th Ann. Conf. SE Assoc. Game & Fish Comms. p. 79-85. 1963 [1965]. WR 122: 61

[119 Forest Ridge Dr., Marietta, Ga.] Summary: Wood ducks can be successfully trapped using any one of several methods and techniques. Bait trapping is the most universally used and accepted method because of its adaptability to a wide variety of situations. Roost trapping can result in a large number of ducks being trapped with a minimum of effort; however, its use is limited to the fall and winter seasons and to special roosting situations. Various State and Bureau personnel are making experimental use of methods which involve the capture of ducks with the aid of a retriever and with dip nets. Success in trapping wood ducks hinges upon man's persistence and ingenuity. Trappers who have had success state that their secret is to "think like a duck" and try new methods if known procedures do not work. An outstanding example of this was at the Okefenokee National Wildlife Refuge, where little trapping success was realized until sliced white potatoes were used as bait.

Hardister, John P. PART 2. LIFE HISTORY AND MANAGEMENT OF THE WOOD DUCK. Wildl. in N.C. 30(2): 20-23, 30-31, illus. Feb. 1966. WR 122: 61

Management of Aix sponsa. [See WR 121: 66 for Part 1.]

Hardister, John P., Jr., F. Eugene Hester, and Thomas L. Quay. MOVEMENTS OF JUVENILE WOOD DUCKS AS MEASURED BY WEB-TAGGING. Proc. 16th Ann. Conf. SE Assoc. Game & Fish Comms. p. 70-75. 1962 [1965]. WR 122: 61

[N.C. Wildl. Resources Comm., Raleigh.]

Hein, Dale Arthur. WOOD DUCK ROOSTING FLIGHT PHENOMENA. Ph.D. thesis, Iowa State Univ. 203 p. 1965. [From Dissertation Abstr. 26(9), 1966.] WR 122: 61

Seasonal changes in roosting populations were similar every year. Numbers reached a premigration peak about Sept. 20, the recommended date for making roosting flight counts to be used as an index to annual changes in abundance of wood ducks. Radial dispersal occurred in late Sept. Migrants ebbed southward during Oct.; few remained in Nov. Seasonal changes in times of roosting flights were described as functions of time, but light controlled times of flights. As fall advanced, flights were compressed in time towards darker ends of flight periods. Metabolic and social appetites appeared to stimulate roosting flights, with changing illumination at low intensities triggering flights. Procedures were recommended for implementing a roosting flight count index in Iowa and the upper Mississippi River Valley which would detect fall-to-fall changes greater than 15 per cent in wood duck abundance. Flight counts at mouths of tributaries were superior to river float counts as an index to trends in abundance of wood ducks. Recommendations were made for using mid-Apr. flight counts as an index to annual changes in nesting populations of wood ducks associated with the Upper Mississippi Refuge in NE Iowa.

Henderson, Upton B. ECONOMICS OF WATERFOWL HUNTING OR PLEASE DON'T TELL MY WIFE. Mo. Conservationist 26(10): 3-5. Oct. 1965. WR 122: 61

[Univ. Mo., Columbia.] Statistics revealed that approximately $24.00 was spent for every goose harvested during the 1964 season at the Swan Lake Natl. Wildl. Refuge.

Hester, F. Eugene. SURVIVAL, RENESTING, AND RETURN OF ADULT WOOD DUCKS TO PREVIOUSLY USED NEST BOXES. Proc. 16th Ann. Conf. SE Assoc. Game & Fish Comms. p. 67-70. 1962 [1965]. WR 122: 61

[N.C. State Coll., Raleigh.] An analysis of the banding study revealed that (1) no nests were deserted as a result of banding during late incubation, (2) survival of adults as measured by the return of nesting birds was 47%, (3) there was a high rate (70%) of return of birds to individual boxes in which they had previously nested, and (4) some females produced two successful broods in a single season.--From abstr.

Karstad, Lars. A CASE OF LEUCOCYTOZOONOSIS IN A WILD MALLARD. Bull. Wildl. Disease Assoc. 1(3): 33-34, 2 figs. July 1965. WR 122: 62
[Ontario Vet. Coll., Guelph, Canada.]

Lein'sh, G. T. [A TECHNIQUE FOR LABELLING ONE-DAY-OLD DUCKS.] Ornitologiya (Moscow) 6: 394-397. 1963. [From Biol. Abstr. 46(20), 1965, from Referat. Zhur., Biol., 1964, no. 19I156. Transl. of Russian abstr.] WR 122: 62

Martinson, R. K. PROPORTION OF RECOVERED DUCK BANDS THAT ARE REPORTED. J. Wildl. Mgmt. 30(2): 264-268. Apr. 1966. WR 122: 62
[Migratory Bird Populations Sta., Laurel, Md.] Abstract: Band-reporting rates (the proportion of duck bands recovered by hunters that are actually reported to the Bird Banding Laboratory) appear to have decreased between the late 1950's and early 1960's. About one-half the banded ducks bagged during the 1958-59 and 1959-60 hunting seasons were reported--a rate similar to those recorded in other studies conducted during the early and mid-1950's. Band-reporting rates were lower for the 1962-63 and 1963-64 hunting seasons; less than one-third of the banded ducks bagged were reported. This decrease in band-reporting rates was concurrent with significant changes in duck hunting regulations, the volume of duck banding, and the method used to relay information to the person who reports a band. Band-reporting rates differed for various species of ducks. In general, band-reporting rates were high on canvasbacks (Aythya valisineria), redheads (A. americana), and pintails (Anas acuta) and low for teals (Anas discors and A. carolinensis).

Martinson, R. K., M. E. Rosasco, E. M. Martin, M. G. Smart, S. M. Carney, C. F. Kaczynski, and A. D. Geis. 1965 EXPERIMENTAL SEPTEMBER HUNTING SEASON ON TEAL. US F&WS, Spec. Sci. Rept.--Wildl. no. 95. v + 36 p. Feb. 1966. WR 122: 62
[Migratory Bird Populations Sta., Laurel, Md.] Abstract: Hunters in 20 States of the Central and Mississippi Flyways participated in an experimental 9-day teal hunting season in September 1965. During this special season, hunters were required to obtain a free permit and could shoot four teal a day (blue-winged teal, green-winged teal, and cinnamon teal, singly or in the aggregate) and have eight in possession. Data were obtained by means of a mail questionnaire survey, a teal wing collection survey, and a hunter performance (spy-blind) survey. A total of 201,972 hunting permits was issued, 49,359 in the Central Flyway and 152,613 in the Mississippi Flyway. Of the applicants who obtained permits, 55 percent hunted. Hunters bagged 448,060 ducks, including 404,710 blue-winged teal and 39,610 green-winged teal. The harvest of illegal ducks, not recognized as such, was 3,600 (from the wing collection), but the actual illegal kill, based on the hunter performance survey, was estimated to be 33,736. The species most prevalent in the illegal kill were wood ducks (13,000) and mallards (7,088). Percentages of cripples and unretrieved ducks revealed by the hunter performance survey were added to these totals, which together with a projected kill for the regular season, gave a total hunting loss by species. These totals were converted to percentages of the fall populations and compared with proportions of the populations killed in previous years. These data suggest that the experimental teal season in 1965 provided 11,085 hunters 257,180 days of recreation without adversely affecting the continental population of any waterfowl species. Additional data are needed, perhaps from three special teal seasons, in order to establish whether the bagged ducks add to or reduce nonhunting mortality for the teal species involved.

McGinn, Larry R., and Leslie L. Glasgow. LOSS OF WATERFOWL FOODS IN RICEFIELDS IN SOUTHWEST LOUISIANA. Proc. 17th Ann. Conf. SE Assoc. Game & Fish Comms. p. 69-79. 1963 [1965]. WR 122: 62
[La. State Univ., Baton Rouge.]

Mikheev, A. [WINTERING CONDITIONS FOR WATERFOWL IN SOVIET WINTERING PLACES IN THE SEASON 1958-1959.] Okhota & Okhotnich'e Khoz. 11: 22. 1959. [From Biol. Abstr. 47(7), 1966, from Referat. Zhur., Biol., 1960, no. 93448. Transl. of Russian abstr.] WR 122: 63

Oleinikov, N., and S. Skripin. [AN EXPERIMENT IN BREEDING WILD DIVER FOWL.] Okhota & Okhotnich'e Khoz. 4: 3-5. 1959. [From Biol. Abstr. 46(24), 1965, from Referat. Zhur., Biol., 1960, no. 40250. Transl. of Russian abstr.] WR 122: 63

Overton, W. Scott, and Otto Florschutz. A NOTE ON THE USE OF PATH ANALYSIS IN ANALYZING AND INTERPRETING OBSERVATIONAL DATA, WITH REFERENCE TO THE ANALYSIS OF GOOSE KILL AROUND LAKE MATTAMUSKEET, NORTH CAROLINA, 1960-1961. Proc. 16th Ann. Conf. SE Assoc. Game & Fish Comms. p. 76-85. 1962 [1965]. WR 122: 63
[Oreg. State Univ., Corvallis.] Summary: The distinction is made between observational data and experimental data, and the analytic and interpretive consequences discussed. The method of path analysis is presented as an aid in this analysis and interpretation. Illustration is made by an analysis of kill data from goose fields around Lake Mattamuskeet, North Carolina in the 1960-61 season. The method proves helpful in defining the system, and several interesting interpretations are made.

Parnell, James F., and Thomas L. Quay. THE POPULATIONS, BREEDING BIOLOGY, AND ENVIRONMENTAL RELATIONS OF THE BLACK DUCK, GADWALL, AND BLUE-WINGED TEAL AT PEA AND BODIE ISLANDS, NORTH CAROLINA. Proc. 16th Ann. Conf. SE Assoc. Game & Fish Comms. p. 53-67, 4 figs. 1962 [1965]. WR 122: 63
[Wilmington Coll., Wilmington, N.C.] This study indicates that controlled water levels and protection may allow substantial increases in nesting populations of Anas rubripes, A. strepera and A. discors orphna on the eastern coastal marshes.--From summ.

Pedersen, Alwin. I GAESSENES YNGLEKOLONIER I NORDØSTGRØNLAND. [AMONG GOOSE BREEDING COLONIES IN NORTHEAST GREENLAND.] Grønland 2: 67-74, illus. 1964. [From Biol. Abstr. 47(7), 1966. In Norwegian.] WR 122: 63
"Branta bernicla hrota, B. leucopsis and Anser brachyrhynchus."

Quay, Thomas L., and T. Stuart Critcher. FOOD HABITS OF WATERFOWL IN CURRITUCK SOUND, NORTH CAROLINA. Proc. 16th Ann. Conf. SE Assoc. Game & Fish Comms. p. 200-209, 1 fig. 1962 [1965]. WR 122: 63
[N.C. State Coll., Raleigh.]

Regnell, Sten. HACKNING AV GRAVAND (TADORNA TADORNA), GRAGAS (ANSER ANSER) OCH SMÄTARNA (STERNA ALBIFRONS) I NORDSMALÄNDSK BERGSKÄRGARD. [SHELDUCK (TADORNA TADORNA), GREY LAG GOOSE (ANSER ANSER) AND LITTLE TERN (STERNA ALBIFRONS) NESTING IN THE NORTHERN ARCHIPELAGO OF SMALAND.] Vår Fågelvärld 23 (3): 245-255, maps. 1964. [From Biol. Abstr. 47(7), 1966. In Swedish with English summ.] WR 122: 63

Rogers, John P., and Leroy J. Korschgen. FOODS OF LESSER SCAUPS ON BREEDING, MIGRATION, AND WINTERING AREAS. J. Wildl. Mgmt. 30(2): 258-264. Apr. 1966. WR 122: 63
[Gaylord Mem. Lab., Univ. Mo., Puxico.] Abstract: This food habits study was based on stomach contents of 164 lesser scaups (Aythya affinis): 39 from a breeding area in Manitoba, 88 from a fall concentration area on the Mississippi River in Illinois, and 37 from two wintering areas on the Louisiana coast. Animal foods made up the bulk of the diet of all three groups: 91.1 percent on the breeding area, 93.5 percent on the fall concentration area, and 63.7 percent on the wintering areas. The most important animal foods were amphipod crustaceans on the breeding area, molluscs on the fall concentration area, and fishes on the wintering areas. The percentages of animal foods are similar to those found in other recent investigations, but they differ from earlier findings which show the lesser scaup to be chiefly vegetarian. Additional collecting is needed, especially in early spring, for a more accurate

picture of seasonal food habits but present information shows that lesser scaups feed chiefly, and sometimes almost exclusively, on animals most of the year. Animal foods decrease in the diet from summer to winter and probably reach a low point in late winter and early spring. Food habits data reflect the close relationship of the lesser and the greater scaup and show that they differ sharply from other North American members of their genus, which are chiefly vegetarians.

Sincock, John L. ESTIMATING CONSUMPTION OF FOOD BY WINTERING WATERFOWL POPULATIONS. Proc. 16th Ann. Conf. SE Assoc. Game & Fish Comms. p. 217-221. 1962 [1965]. WR 122: 64

[Patuxent Wildl. Res. Center, Laurel, Md.] Summary and discussion: This paper proposes a method of estimating the total food demands of the wintering waterfowl population of an area. The average annual food consumption of each species of waterfowl using the Back Bay, Virginia-Currituck Sound, North Carolina, area was estimated during the period 1958-62, by multiplying the waterfowl days by the estimated daily food consumption of each species of waterfowl. Daily consumption, in pounds dry weight, was estimated from the literature to be approximately 10 percent of the average wet body weight of the species. The percentage volume of each food item in the diet of each species was multiplied by the estimated average annual food consumption by the population of that species to obtain an estimate of the quantity of each food item. An example is given to show how waterfowl food demand can be compared with food supply. A more concrete understanding by waterfowl habitat managers who may endeavor to produce more waterfowl foods, or by waterfowl researchers who may seek to evaluate habitats could result from this mode of expressing waterfowl food demand. The use of waterfowl days utilization in weighting food habits data eliminates the necessity of attempting to achieve proportional sampling of waterfowl gizzards, which is virtually impossible. Potential refinement of estimating food demand consists of obtaining adequate stomach samples of each waterfowl species, improving the estimate of food consumption of each abundant waterfowl species, establishing dry weight-volume ratios of each food item, and evaluating their importance in further weighting the data.

Tatarinkova, I. P. [A METHOD FOR BANDING FLUFFY DUCK FLEDGLINGS, USING YOUNG OF THE DIVER AS AN EXAMPLE.] In: (Summaries of reports from 5th Baltic Ornithological Conference.) (Tartu). p. 186-187. 1963. [From Biol. Abstr. 46(19), 1965, from Referat. Zhur., Biol., 1964, no. 15I206. In Russian.] WR 122: 64

Trainer, D. O., and R. A. Hunt. LEAD POISONING OF WHISTLING SWANS IN WISCONSIN. Avian Diseases 9(2): 252-263, 2 figs. Feb. 1965. WR 122: 64

[Univ. Wis., Madison.] Summary: During the spring of 1964, whistling swan mortality of major proportions occurred at several sites in Wisconsin. More than 200 swans succumbed during these die-offs. Laboratory examination of 45 of these birds established that lead poisoning was responsible for the majority of the mortality. There was considerable variation of pathological lesions; however, characteristic findings generally associated with this disease of swans included: emaciation, enteritis, green diarrhea, a distended gall bladder, stained gizzard lining and liver, and lead pellets in the gizzard. The number of pellets recovered from affected birds ranged from 0 to 201 and averaged 50 pellets per bird. To confirm a diagnosis of lead poisoning, necropsy findings and chemical analysis are essential.

Yocom, Charles F. ESTIMATED POPULATIONS OF GREAT BASIN CANADA GEESE OVER THEIR BREEDING RANGE IN WESTERN CANADA AND WESTERN UNITED STATES. Murrelet 46(2): 19-26 + 1 fig. May-Aug. 1965. WR 122: 64

[Humboldt State Coll., Arcata, Calif.] An estimated 17,000 breeding pairs of Branta canadensis moffitti in the breeding range including British Columbia, Alberta, southwest Saskatchewan, Wash., Idaho, Mont., N. Dak., S. Dak., Colo., Wyo., Utah, Nev., and northeast Calif.

Blandin, Warren W. RENESTING AND MULTIPLE BROODING STUDIES OF MARKED CLAPPER RAILS. Proc. 17th Ann. Conf. SE Assoc. Game & Fish Comms. p. 60-68, 2 figs. 1963 [1965]. WR 122: 65

[S.C. Wildl. Resources Dept., Columbia.] Summary: Renesting and multiple brooding studies of marked clapper rails were conducted on two study areas from March 12 to August 21, 1963. A new type of nest trap successfully used with clapper rails is described. Renesting is an important component of clapper rail nesting. Several important characteristics of renests and renesting are described and discussed. Proof of occurrence of multiple brooding is established. The significance of multiple brooding is discussed, and its essential characteristics are described. The importance of renesting and multiple brooding to total production will vary from year to year depending upon nesting success.

Kaufmann, Gerald W., and Robert Ivins. THE EFFECTS OF A FLOOD ON NESTING IOWA MARSH BIRDS. Iowa Bird Life 45(1): 9-11. Mar. 1965. WR 122: 65

[Loras Coll., Dubuque, Iowa.] Among ducks and marsh birds studied only the tree-nesting wood ducks and the late-nesting least bitterns were unaffected by flooding as a result of 7.5 inches of rain within a two-day period.

Mikhlin, V. E. [AN EXPERIMENT IN DYEING THE LAUGHING GULL.] Uch. Zap. Gor'kovskogo Univ. 63: 7-10. 1963. [From Biol. Abstr. 46(24), 1965, from Referat. Zhur., Biol., 1964, no. 19I176. Transl. of Russian abstr.] WR 122: 65

The relation of gulls to individuals in the colony which have been dyed different colors was studied.

Miller, Richard S., and W. J. D. Stephen. SPATIAL RELATIONSHIPS IN FLOCKS OF SANDHILL CRANES (GRUS CANADENSIS). Ecology 47(2): 323-327. Early Spring 1966. WR 122: 65

[Univ. Saskatchewan, Saskatoon, Saskatchewan.] Abstract: The Clark-Evans model of spatial distribution was applied to aerial photographs of flocks of Sandhill Cranes feeding in cultivated fields. Distance to nearest neighbor for a total of 1,326 individuals in 29 flocks varying in size from 3 to 252 birds had a mean value of 5.79 ± 0.16 ft and was remarkably uniform, regardless of flock size. Departure from random spacing was consistently in the direction of uniform spacing, although the degree of uniformity varied inversely with flock size. A modified model based on flocks occupying circular areas and composed of sub-groups, with a constant individual distance within groups and an additional space factor between groups, seems to provide a reasonable interpretation of dispersion in different-sized flocks of Sandhill Cranes. A conclusion drawn from the correspondence between the theoretical model and the data and observations is that large flocks of Sandhill Cranes are loosely organized assemblages of smaller groups which behave more as coordinated units and are based on a relationship of individual distances.

Strömberg, Gunnar. SVARTTÄRNANS (CHILIDONIAS NIGRA) STRÄCK I ÖSTERJÖOMRADET 1960. [PASSAGE OF THE BLACK TERN (CHILIDONIAS NIGRA) IN THE BALTIC SEA REGION IN 1960.] Vår Fågelvärld 23(3): 256-265, maps. 1964. [From Biol. Abstr. 47 (8), 1966. In Swedish with English summ.] WR 122: 65

[Nya Skeppsbrog. 1, Karlskrona, Sweden.]

Yudin, K. A. [THE PROPATAGIAL APPARATUS IN THE CHARADRIIFORMES.] Trudy Zool. Inst. Akad. Nauk SSSR 33: 212-255. 1964. [From Biol. Abstr. 46(20), 1965, from Referat. Zhur., Biol., 1964, no. 24I152. Transl. of Russian abstr.] WR 122: 65

Zablotskii, V. I., and L. I. Zablotskaya. [AN ECOLOGICAL-FAUNISTIC SURVEY OF THE GULLS OF THE SOUTHWEST CASPIAN (SEA) AND THEIR IMPORTANCE FOR FISHERIES.] Trudy Astrakhanskogo Zapovednika 8: 309-348. 1963. [From Biol. Abstr. 46(22), 1965, from Referat. Zhur., Biol., 1964, no. 16I208. Transl. of Russian abstr.] WR 122: 65

Bochenski, Zygmunt. THE DIET OF THE EAGLE-OWL BUBO BUBO (L.) IN THE PIENINY MTS. Acta Zool. Cracoviensia 5(8): 311-333, illus. 1960. [From Biol. Abstr. 46(20), 1965. Original with Polish and Russian summ.] WR 122: 66

Grachev, V. A. [THE FEEDING OF THE GRAY SEA-EAGLE AT THE ILI RIVER DELTA.] Sbornik Nauch.-Tekh. Inform. Vses. Nauch.-Issled. Inst. Zhivotn. Syr'ya Pushniny 10: 89-96. 1964. [From Biol. Abstr. 46(20), 1965, from Referat. Zhur., Biol., 1964, no. 20I193. Transl. of Russian abstr.] WR 122: 66

Heinrich, Karel. Z HNIZDNI BIOLOGIE KRAHUJCE. [THE NESTING HABITS OF ACCIPITER NISUS NISUS.] Ziva 13(1): 35-37, illus. 1965. [From Biol. Abstr. 47(7), 1966. In Czech.] WR 122: 66

Jansson, Erik. ANTECKNINGAR RÖRANDE HÄCKANDE SPARVUGGLA (GLAUCIDIUM PASSERINUM). [NOTES ON A BREEDING PAIR OF PYGMY OWLS (GLAUCIDIUM PASSERINUM) IN CENTRAL SWEDEN.] Vår Fågelvärld 23(3): 209-222, illus. 1964. [From Biol. Abstr. 47(8), 1966. In Swedish with English summ.] WR 122: 66
[Pilens backe 6, Linkoping, Sweden.]

Kasparson, G. R. [THE FOOD OF SOME DIURNAL BIRDS OF PREY IN THE LATVIAN SSR.] Zool. Zhur. 37(9): 1389-1396. 1958. [From Biol. Abstr. 47(5), 1966. In Russian with English summ.] WR 122: 66

Krivonosov, G. A. [SURVEY OF THE ECOLOGY AND GEOGRAPHICAL DISTRIBUTION OF PREDACIOUS BIRDS OF THE VOLGA RIVER DELTA.] Trudy Astrakhanskogo Zapovednika 8: 245-293. 1963. [From Biol. Abstr. 47(1), 1966, from Referat. Zhur., Biol., 1965, no. 11148. Transl. of Russian abstr.] WR 122: 66

Mathey, W. J. ISOSPORA BUTEONIS HENRY 1932 IN AN AMERICAN KESTREL (FALCO SPARVERIUS) AND A GOLDEN EAGLE (AQUILA CHRYSAËTOS). Bull. Wildl. Disease Assoc. 2(2): 20-22, 3 figs. Apr. 1966. WR 122: 66
[Wash. State Univ., Pullman.] Abstract: Isospora buteonis Henry 1932 was considered the probable cause of death in an American kestrel (Falco sparveius) and a possible cause of death in a golden eagle (Aquila chrysaëtos) in the state of Washington, U.S.A. I. buteonis has been reported only from the western part of North America. It resembles I. bigemina in size, in location and sporulation of oocysts beneath the intestinal epithelium, and in fragility of the oocyst wall.

Norberg, Ake. STUDIER ÖVER PÄRLUGGLANS (AEGOLIUS FUNEREUS) EKOLOGI OCH ETOLOGI. [STUDIES ON THE ECOLOGY AND ETHOLOGY OF TENGMALM'S OWL (AEGOLIUS FUNEREUS).] Vår Fågelvärld 23(3): 228-244, illus. 1964. [From Biol. Abstr. 47(8), 1966. In Swedish with English summ.] WR 122: 66
[Gibraltargatan 94-307, Goteborg, Sweden.]

Olyphant, Jane. THE CARE OF INJURED OWLS. Passenger Pigeon 27(1): 20-23, illus. Spring 1965. WR 122: 66
[4000 Hidden Bay Road, St. Paul, Minn.]

Osterlof, Sten. FISKGJUSEN (PANDION H. HALAIËTUS [L.]) I NORRA PERSIEN 1964. [OSPREYS (PANDION H. HALAIËTUS) IN NORTHERN IRAN.] Zool. Revy 2: 41-46, map. 1965. [From Biol. Abstr. 46(23), 1965. In Swedish.] WR 122: 66
[Nat. Hist. Museum, Stockholm, Sweden.]

Peczely, P. [FUNCTIONAL ANATOMICAL EXAMINATION OF THE INTERCONNEXION BETWEEN THE MORPHOLOGICAL FEATURES OF THE THORACIC VERTEBRAE IN BIRDS OF PREY AND THEIR ACQUISITION OF FOOD.] Acta Morphol. Acad. Sci. Hung. 13(2): 101-118, illus. 1965. [From Biol. Abstr. 47(6), 1966. With Russian and English summ.] WR 122: 66
[Museum Nat. Hist., Budapest, Hungary.]

Petrov, P. A. [FEEDING HABITS OF BUTEO RUFINUS IN THE LOWER COURSE OF THE KUMA RIVER.] Zool. Zhur. 43(9): 1412-1414. 1964. [From Biol. Abstr. 46(19), 1965. In Russian with English summ.] WR 122: 67

Scheel, Henning. HAVØRNEN OG DENS FØDE. [THE SEA EAGLE AND ITS FOOD.] Grønland 2: 92-97, illus. 1964. [From Biol. Abstr. 47(5), 1966. In Danish.] WR 122: 67

Spacek, Miroslav. ORLIK KRATKOPRSTY A JINA POZOROVANI. [CIRCAETUS GALLICUS IN SLOVAKIA.] Ziva 13(1): 33-35, illus. 1965. [From Biol. Abstr. 47(7), 1966. In Czech.] WR 122: 67

Varshavskii, S. N. [DISTRIBUTION, BIOTOPE DISTRIBUTION, AND FEATURES OF NESTING FOR THE BLACK KITE (MILVUS KORSCHUN GM.) IN THE STEPPE.] Bull. Moscow Obshch. Ispit. Prirody (Biol.) 69(5): 30-39, map. 1964. [From Biol. Abstr. 46(23), 1965. In Russian with English summ.] WR 122: 67

Willis, Edwin O. A PREY CAPTURE BY THE ZONE-TAILED HAWK. Condor 68(1): 104-105. Jan.-Feb. 1966. WR 122: 67
[Am. Museum Nat. Hist., New York, N.Y.] Zone-tailed hawks (Buteo albonotatus) may imitate the soaring forms of vultures to aid in close approach to their prey.

BLACKBIRDS, STARLINGS, CROWS

Banks, Richard C. THE NESTING STARLING (STURNUS VULGARIS) POPULATION IN SAN DIEGO COUNTY, CALIFORNIA. Bull. Southern Calif. Acad. Sci. 64(1): 11-15, map. 1965. [From Biol. Abstr. 46(24), 1965.] WR 122: 67
[Nat. Hist. Museum, San Diego, Calif.]

Brown, L. H. REDWINGED STARLINGS [ONYCHOGNATHUS, STILBOPSAR, GALEOPSAR] OF KENYA [HABITATS, BEHAVIOR, CHARACTERISTICS]. J. East Afr. Nat. Hist. Soc. Nat. Museum 25(1): 41-56, illus. 1965. [From Biol. Abstr. 46(20), 1965.] WR 122: 67
[East Afr. Nat. Hist. Soc., Nairobi, Kenya.]

Decino, Thomas J., Donald J. Cunningham, and Edward W. Schafer. TOXICITY OF DRC-1339 TO STARLINGS. J. Wildl. Mgmt. 30(2): 249-253, 1 fig. Apr. 1966. WR 122: 67
[Cunningham: Bur. Sport Fisheries & Wildl., Federal Center, Denver, Colo.] Abstract: Reduction of starling (Sturnus vulgaris) populations by the use of poisoned baits is frequently suggested, but an effective, nonhazardous toxicant has not been available. A recently discovered chemical, DRC-1339 (3-chloro-p-toluidine hydrochloride), meets many of the requirements; it is highly toxic to starlings (acute oral LD_{50} = 3.8 mg/kg), well accepted, relatively nontoxic to rats, and generally less toxic to most other birds. Hawks are particularly resistant and there appears to be little danger that these birds, or mammalian carnivores, would be killed by eating DRC-1339-poisoned starlings. The margin of safety is less for the game birds that were tested. DRC-1339 causes a slow, nonviolent death; uremic poisoning and congestion of major organs appear to be the principal causes.

Delvingt, W. L'ETOURNEAU EN BELGIQUE: LONGEVITE, PONTES. [THE STARLING IN BELGIUM: LONGEVITY, (EGG) LAYING.] Gerfaut Rev. Belg. Ornithol. 52(4): 586-601. 1962. [From Biol. Abstr. 47(2), 1966. In French with Dutch and English summ.] WR 122: 67
[Inst. Agron., Gembloux, Belgium.]

Delvingt, W. RYTHME QUOTIDIEN DES ACTIVITES DE L'ETOURNEAU, STURNUS VULGARIS L., AU DORTOIR. [DAILY RHYTHM OF THE ACTIVITIES OF THE STARLING, STURNUS VULGARIS L. AT THE ROOSTING AREA.] Gerfaut Rev. Belg. Ornithol. 53 (4): 489-507, illus. 1963. [From Biol. Abstr. 46(24), 1965. In French with English summ.] WR 122: 68
[Inst. Agron., Gembloux, Belgium.]

Delvingt, W., and L. Nef. DESTRUCTION DE PONTES APRES VISITES DES NICHOIRS ET CAPTURES DE LA FEMELLE. [DESTRUCTION OF (BIRD) EGGS AFTER THE VISITS OF STARLINGS (STURNUS VULGARIS) AND CAPTURE OF THE FEMALE.] Gerfaut 52(1): 51-53. 1962. [From Biol. Abstr. 47(4), 1966. In French.] WR 122: 68
[Inst. Agron., Gembloux, Belgium.]

Jondet, M., and P. L. Maillet. OBSERVATIONS SUR UN CAS DE PANACHURE CHEZ STURNUS VULGARIS L. [OBSERVATIONS ON A CASE OF VARIEGATION IN STURNUS VULGARIS L.] Bull. Soc. Sci. Bretagne 38(3/4): 191-192. 1963. [From Biol. Abstr. 47 (7), 1966. In French.] WR 122: 68
[Fac. Sci., Rennes, France.]

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